This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

B 49582 7

State of Connecticut

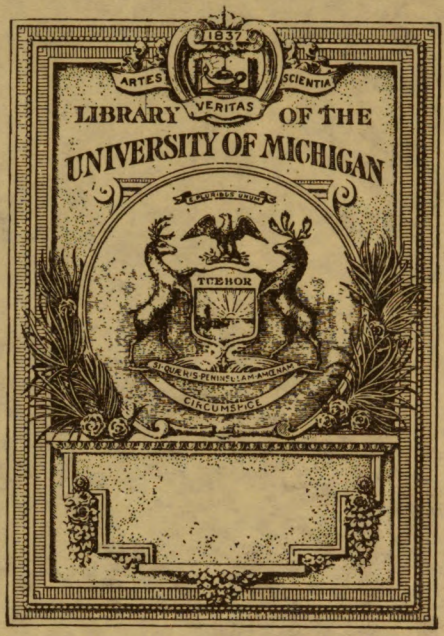
REPORT

OF THE

STATE DEPARTMENT OF HEALTH

1921-1922

Digitized by Google



THE GIFT OF
Conn. St. Dept. of Health

Digitized by Google

614.0979
C6

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

State of Connecticut
PUBLIC DOCUMENT No. 25

THIRTY-SEVENTH REPORT

(44th AND 45th YEARS)

OF THE

STATE DEPARTMENT OF HEALTH

FOR TWO YEARS ENDING JUNE 30, 1922

JOHN T. BLACK, M. D., Commissioner

HARTFORD
1922

Digitized by Google

PUBLICATION
APPROVED BY
THE BOARD OF CONTROL

REFORMATORY PRESS
CHESHIRE, CONN.

Digitized by Google

Conn. St. Dept. of Health
pt.
4-9-1924

CONTENTS

	Page
Public Health Council, 1921-1922	11
Commissioner of Health, 1921-1922	13
The Health of the State	13
Evaluation Statistics	29
Financial Statements, 1921-1922	36–37
Division of Supplies, 1921-1922	39
Division of Medical Registration, 1921-1922	49
Bureau of Preventable Diseases, 1921	55
Bureau of Preventable Diseases, 1922	103
Division of Venereal Diseases, 1921-1922	185
Division of Mental Hygiene, 1922	205
Bureau of Laboratories, 1921	211
Bureau of Laboratories, 1922	237
Bureau of Engineering, 1921-1922	263
Bureau of Vital Statistics, 1921-1922	361
Division of Public Health Nursing, 1921-1922	393
List of Connecticut Health Officers	405
Subject Index	415
Town Index	427

Digitized by Google

Digitized by Google

STATE DEPARTMENT OF HEALTH

Public Health Council

John T. Black, M. D. Chairman, ... Hartford
Edward K. Root, M. D. Secretary, ... Hartford
C.-E. A. Winslow, M. S., D. P. H., ... New Haven
Robert A. Cairns, C. E., ... Waterbury
James A. Newlands, B. S., ... Hartford
S. B. Overlock, M. D., ... Pomfret
James W. Knox, Esq., ... Hartford

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

STATE DEPARTMENT OF HEALTH

Administrative Staff

John T. Black, M. D. (6) — Commissioner

Stanley H. Osborn, M. D., C. P. H. (5) — Deputy Commissioner
Director—Bureau of Preventable Diseases

William C. Welling (2) — Director—Bureau of Vital Statistics

J. Frederick Jackson (8) — Director—Bureau of Engineering

Charles J. Bartlett, M. D. (7) — Director—Bureau of Laboratories

Howard A. Lanpher, M. D. (4) — Director—Bureau of Child Hygiene

Margaret K. Stack, R. N. (1)
Chief—Division of Public Health Nursing

Daniel E. Shea, M. D. (3) — Chief—Division of Venereal Diseases

Otto G. Weidman, M. D. (9) — Chief—Division of Mental Hygiene

I. Benjamin Crilly (11) — Chief—Division of Supplies

Frances P. Merrill (10) — Chief—Division of Medical Registration

(Numbers refer to accompanying plate).

Digitized by Google

Digitized by Google

REPORT OF PUBLIC HEALTH COUNCIL
REPORT OF COMMISSIONER OF HEALTH

Digitized by Google

Digitized by Google

THIRD BIENNIAL REPORT

OF THE

PUBLIC HEALTH COUNCIL.

To His Excellency, Everett J. Lake,

Governor of Connecticut.

SIR:—The Public Health Council has the honor to submit its third report in accordance with Section 2363 of the General Statutes, this report being for the biennial period ending June 30, 1922.

On July 1, 1921, Dr. S. B. Overlock was appointed by Your Excellency to fill the vacancy caused by the expiration of the term of Dr. H. P. Mansfield, and Mr. James W. Knox to fill the unexpired portion of the term of Mr. Lewis Sperry, resigned. The Council wishes to pay tribute to the long and faithful service of Mr. Sperry as a councilor with the State Department of Health over a period of sixteen years.

During the period of this report, thirteen regular meetings have been held and many matters of importance considered. The Sanitary Code, Chapter I, was revised and a part of Chapter III was adopted. All matters presented to this Board for consideration are incorporated in the official report of the Commissioner which is appended.

Respectfully,

(Signed) E. K. ROOT,

Secretary.

September 8, 1922.

Digitized by Google

Digitized by Google

THIRD BIENNIAL REPORT
OF THE
COMMISSIONER OF HEALTH

To the Public Health Council,

GENTLEMEN:—I have the honor to submit the Report of the State Department of Health for the biennial period ending June 30, 1922, this being the third biennial report of the State Department of Health and the thirty-seventh state health report.

The Health of the State

The death rate for Connecticut for 1920 was 13.6 and for 1921, 11.4. To those who have made a study of death rates, the rate of 11.4 for 1921 indicates a wonderful improvement in the health of Connecticut people. This is the lowest death rate ever attained by Connecticut, and the lowest ever recorded by any state in the eastern part of the country. Not only does this rate indicate that Connecticut is now the healthiest state in which to live, but that its citizens have been saved an annual economic loss of $6,000,000, demonstrating clearly the effectiveness of the new health system of the state.

It was only a few years ago that the health of Connecticut people did not compare favorably with that of neighboring states nor had it shown any marked improvement over a long period of time. A popular sentiment for health protection was developing, however, and it only needed a central organization to direct and co-ordinate the work. What has been accomplished by the co-ordination of state and local agencies is shown in this report. Had the death rate of 1915 prevailed in 1921, there would have been 10 more deaths each day of the year; to be exact, there are 4,712 people living today who would have died had the 1915 death rate prevailed in 1921.

Connecticut also had the lowest infant mortality rate in the Eastern United States. The typhoid and tuberculosis death rates while not the lowest were sufficiently low to indicate marked improvement. In 1915, 107 babies died during the first year of life out of every thousand born, while in 1921 only 73 died. This great reduction in the infant mortality rate means the saving of 1,144 babies during the year and is the largest factor in the reduction of the general death rate. Much of this good work can be accredited to the development of public health nursing and the child welfare clinic. The tuberculosis death rate has

Digitized by Google

been reduced from 139 per 100,000 population to 95.6, and typhoid fever from 12 to 3.

Nearly all of the communicable and preventable diseases show some improvement, although scarlet fever and whooping cough show an increase which indicates that more intensive measures for control should be undertaken.

As an example of what can be accomplished by energetic measures, we would refer to the venereal diseases. It has only been within the last few years that any real effort has been made to curtail the enormous loss occasioned by these diseases. The State Department of Health co-operating with local health agencies is now treating several thousand of the afflicted each year, restoring them to normal health and eliminating a serious menace to the community.

There are other health activities which have aided materially in improving the health of the state: the laboratories have quadrupled their services for health officers and physicians, and the engineers are safeguarding the water supplies and improving sanitation in general. Not the least of the activities of the State Department of Health have been the promotion of public health nursing and the assistance in establishing infant welfare agencies. Daily reporting of communicable diseases rather than monthly, the interstate and inter-community exchange of reports, the special study of outbreaks of disease, with the publication of pamphlets and weekly reports have all been effective in promoting the health of the state.

The personnel of the State Department of Health which before reorganization consisted of 4 full-time and 2 part-time employees, is now represented by 40 full-time and 5 part-time workers. The appropriations in the last seven years have increased from 2 cents to 11 cents per capita; the appropriations for local health work throughout the state have as a rule been increased proportionately, although much of the local health work is still sustained by private subscription.

The only serious outbreak of disease during the period of this report was smallpox in Fairfield County. From December, 1921 to June 30, 1922, there were reported 430 cases with six deaths.

Organization

Practically no change in the organization of the Department has been made, other than the elimination by legislative action of the Industrial Wastes Division.

Digitized by Google

In February, 1922, the various offices of the Department which were scattered throughout the Capitol and in office buildings in the city were consolidated under one roof in the new state office building opposite the Capitol.

The detailed reports of the bureaus and divisions now operating in the Department are appended.

Special Needs of the State

Connecticut may well be proud of her present health record and of the prestige she has established, but there are many more lives which can be saved and with greater economy to the state if it but continues with its aggressive program.

The state lacks, absolutely, accommodations for those ill with cancer, gangrene, syphilis and other chronic conditions. Existing hospitals can not and should not care for such cases. The misery and suffering thus occasioned should not be tolerated in a progressive state. The records show that there are almost a thousand of these neglected sufferers who cannot secure proper care. A state infirmary is a most urgent need, and it is hoped that the Legislature this year will give consideration to the report of its Infirmary Commission.

Connecticut is being flooded with poorly qualified medical practitioners. It is needless to say that the effect on the general health of the people will be unfavorable. The Medical Practice Act should be revised to include better control of all medical and allied professions.

The original certificates of births, marriages and deaths should be filed with a central agency for permanent record and the local registrars should retain certified copies. The reverse of this procedure is now in effect with the result that these valuable records are in some instances grossly neglected.

It has been clearly demonstrated that efficient health work saves lives and at the same time accomplishes an economic saving many times greater than the cost of the endeavor. This being true, the day of the part-time health official has gone by. Every community should have its full-time health official, and the state can encourage the employment of full-time health workers by establishing health districts or by temporarily subsidizing such positions.

More and better work can be accomplished in the Department if adequate laboratory facilities are provided and

Digitized by Google

if distinct bureaus of Public Health Nursing and Public Health Education are created. An appropriation was made in 1919 for a laboratory building to be built in conjunction with the Agricultural Experiment Station in New Haven. The appropriation was not sufficient to build the necessary structure. The incoming Legislature should make this construction possible by appropriating sufficient additional funds.

The State Department of Health is called on to give expert advice and pass final judgment on many matters of vital importance to the health of the state, consequently in making the appropriations provision should be made for the payment of sufficient salaries to engage the most expert personnel obtainable.

The following recommendations are offered for immediate consideration:

Recommendations

1. The establishment of a State Infirmary for the care of the chronic and neglected sick.
2. The revision of the Medical Practice Act.
3. The establishment of Bureaus of Public Health Nursing and of Public Health Education in the State Department of Health.
4. The revision of the Vital Statistics laws.
5. The additional appropriation of $25,000 to permit the construction of a laboratory building.
6. Appropriations in accordance with the following budget.

STATE DEPARTMENT OF HEALTH

Estimated Expenses for two years ending July 1, 1925

1	General Administration	$35,000
2	Antitoxins and Vaccines	40,000
3	Preventable Diseases	40,000
4	Vital Statistics	30,000
5	Sanitary Engineering	40,000
6	Laboratory Maintenance	60,000
7	Child Hygiene	20,000
8	Venereal Diseases	20,000
9	Mental Hygiene	10,000
10	Public Health Nursing	20,000
11	Public Health Education	10,000
12	Salary Commissioner	12,000
		$337,000

Digitized by Google

Special statistical reports and financial statements are appended hereto.

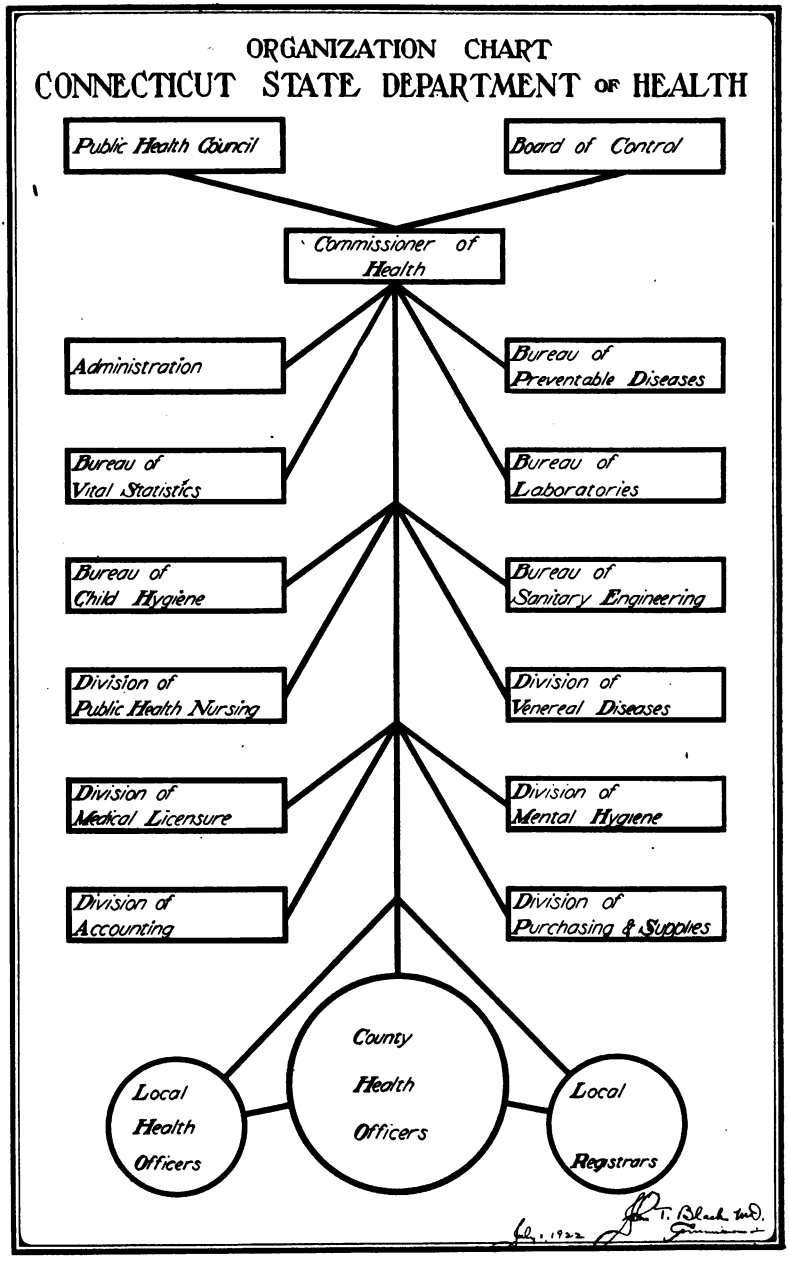
Respectfully,

(Signed) JOHN T. BLACK,
Commissioner.

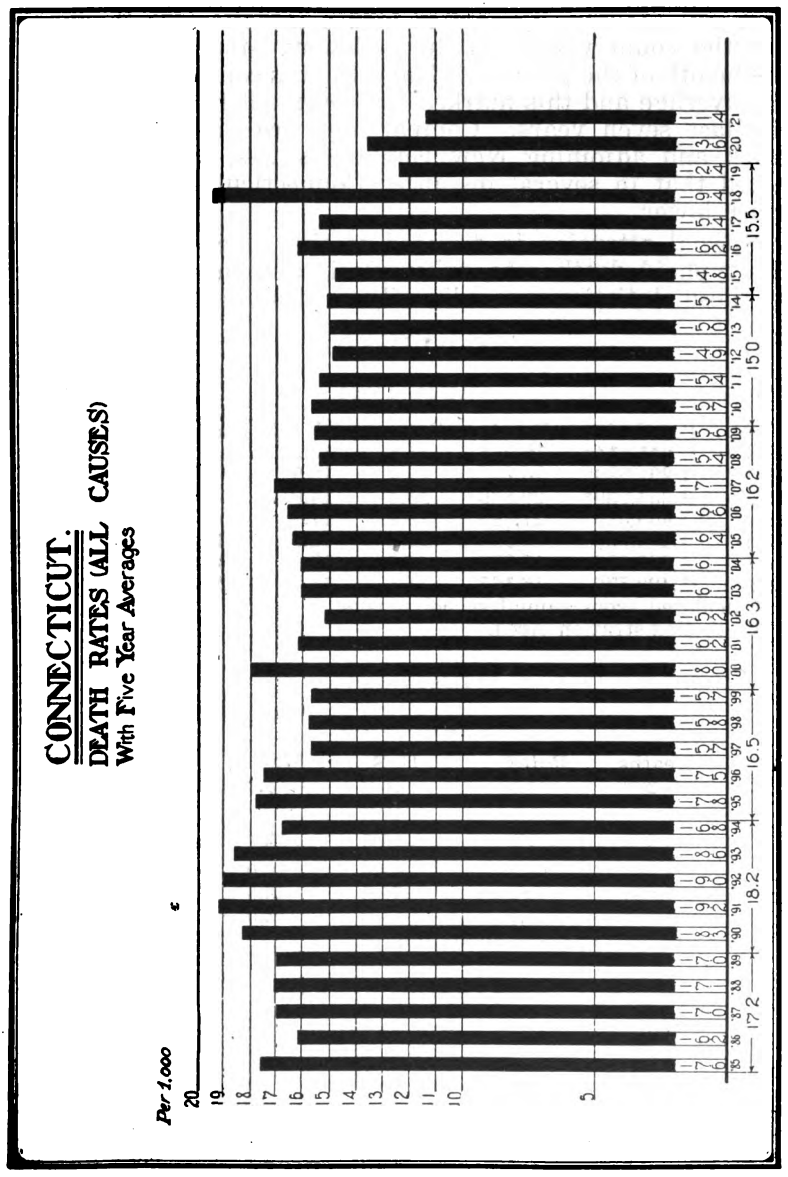
Approved by the Public Health Council at its meeting held on Friday, September 8, 1922.

(Signed) E. K. ROOT,
Secretary.

Digitized by Google



Digitized by Google



Digitized by Google

THE HEALTH OF THE STATE

A general improvement in health is noticeable throughout the country but, as the following statistics indicate, the health of the people of Connecticut is considerably above the average and this marked improvement has been within the last seven years. Comparisons are given with New York and adjoining New England states, and it will be noted that in several instances Connecticut's rate is very much lower.

Special attention is directed to the general death rate, the typhoid death rate, tuberculosis and infant mortality, as these statistics are ordinarily used as indices of health.

Total Deaths

1915-1921

Year	Population	Deaths	Rate	U. S.†	Mass.	N.Y.	R. I.
1915	1,241,314*	18,274	*14.7*	13.3	14.5	14.6	14.8
1916	1,291,989*	20,237	*15.6*	13.9	15.2	14.8	15.5
1917	1,354,930*	20,836	*15.4*	14.0	15.0	14.7	15.3
1918	1,409,530*	27,380	*19.4*	17.9	20.6	18.2	19.5
1919	1,464,360*	18,253	*12.4*	12.9	13.1	13.2	13.4
1920	1,393,292	18,923	*13.6*	13.1	13.9	13.8	13.1
1921	1,420,576	16,167	*11.4*	11.7	12.3	12.2	——

* Calculated from annual school census
† U. S. Registration Area.

INFLUENZA

1915—1921

Year	Deaths	Rate*	U. S.	Mass.	N. Y.	R. I.
1915	209	*16.8*	16.0	8.5	12.9	12.6
1916	526	*40.7*	26.4	18.3	19.2	26.5
1917	360	*26.5*	17.2	12.4	14.4	20.1
1918	7,602	*539.3*	298.9	337.0	214.4	343.9
1919	1,583	*108.1*	98.8	70.9	63.9	93.3
1920	1,254	*90.0*	71.0	43.9	56.4	58.6
1921	193	*13.6*	——	3.9	7.2	——

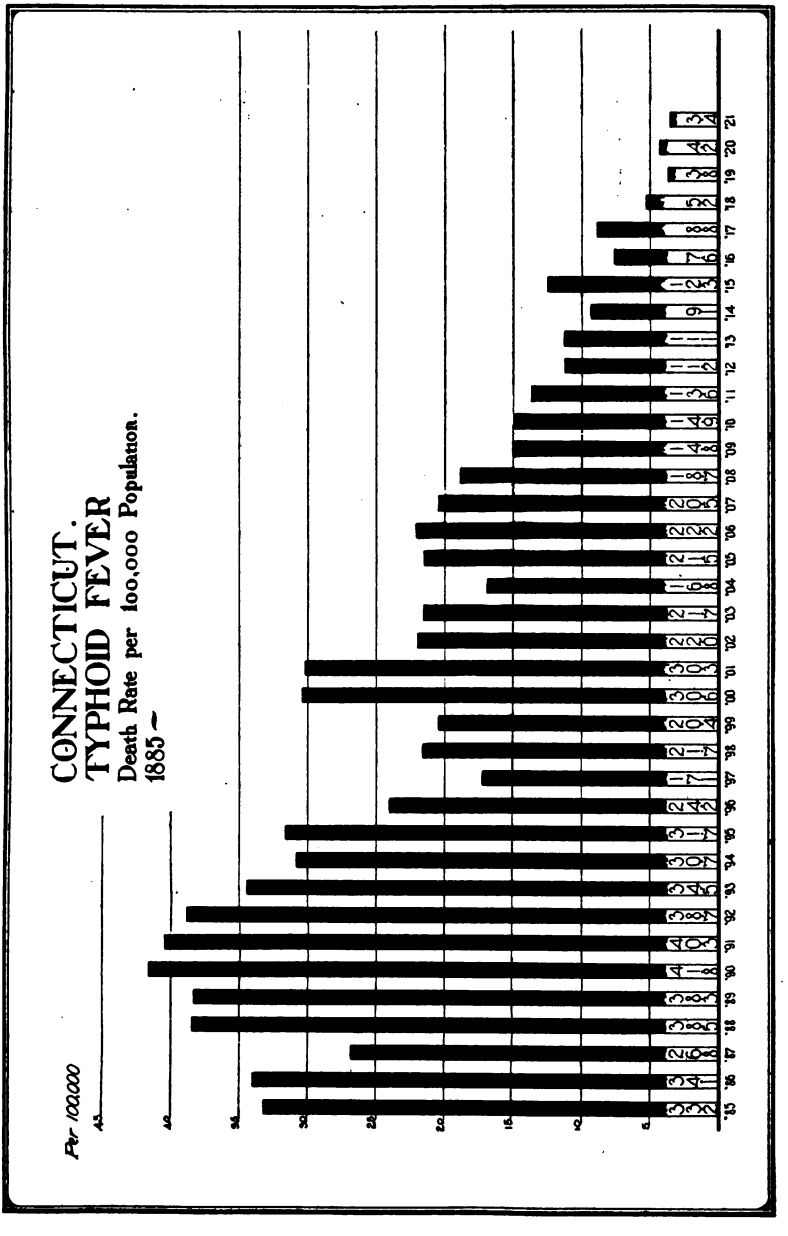
* All rates per 100,000 population

TYPHOID FEVER

1915—1921

Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	151	*12.2*	12.4	6.7	7.6	10.1
1916	94	*7.3*	13.3	4.7	5.9	6.8
1917	119	*8.8*	13.4	4.8	5.6	5.4
1918	74	*5.2*	12.5	4.0	5.5	5.3
1919	56	*3.8*	9.2	2.6	3.3	3.2
1920	58	*4.2*	7.8	2.5	3.5	2.6
1921	49	*3.4*	——	3.0	3.6	——

Digitized by Google



Digitized by Google

TUBERCULOSIS—All Forms

1915—1921

Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	1,727	*139.1*	145.8	140.2	163.9	157.0
1916	1,795	*138.9*	141.6	147.4	155.1	166.7
1917	2,079	*153.4*	146.4	144.1	159.9	162.5
1918	2,064	*146.4*	149.1	156.7	160.7	169.4
1919	1,707	*116.6*	125.7	122.7	133.7	138.7
1920	1,651	*118.5*	114.0	113.6	120.0	132.3
1921	1,358	*95.6*	——	99.1	101.3	——

PNEUMONIA—All Forms

1915-1921

Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	1,936	*156.0*	132.7	160.6	166.9	164.9
1916	2,553	*197.6*	137.3	173.0	161.9	159.0
1917	2,661	*196.4*	149.8	169.6	173.4	179.1
1918	2,991	*212.2*	284.3	379.2	358.1	291.8
1919	1,632	*111.4*	123.6	128.4	157.9	135.4
1920	2,084	*149.6*	137.3	164.4	157.6	166.7
1921	1,381	*97.2*	——	107.6	100.2	——

DIPHTHERIA

1915—1921

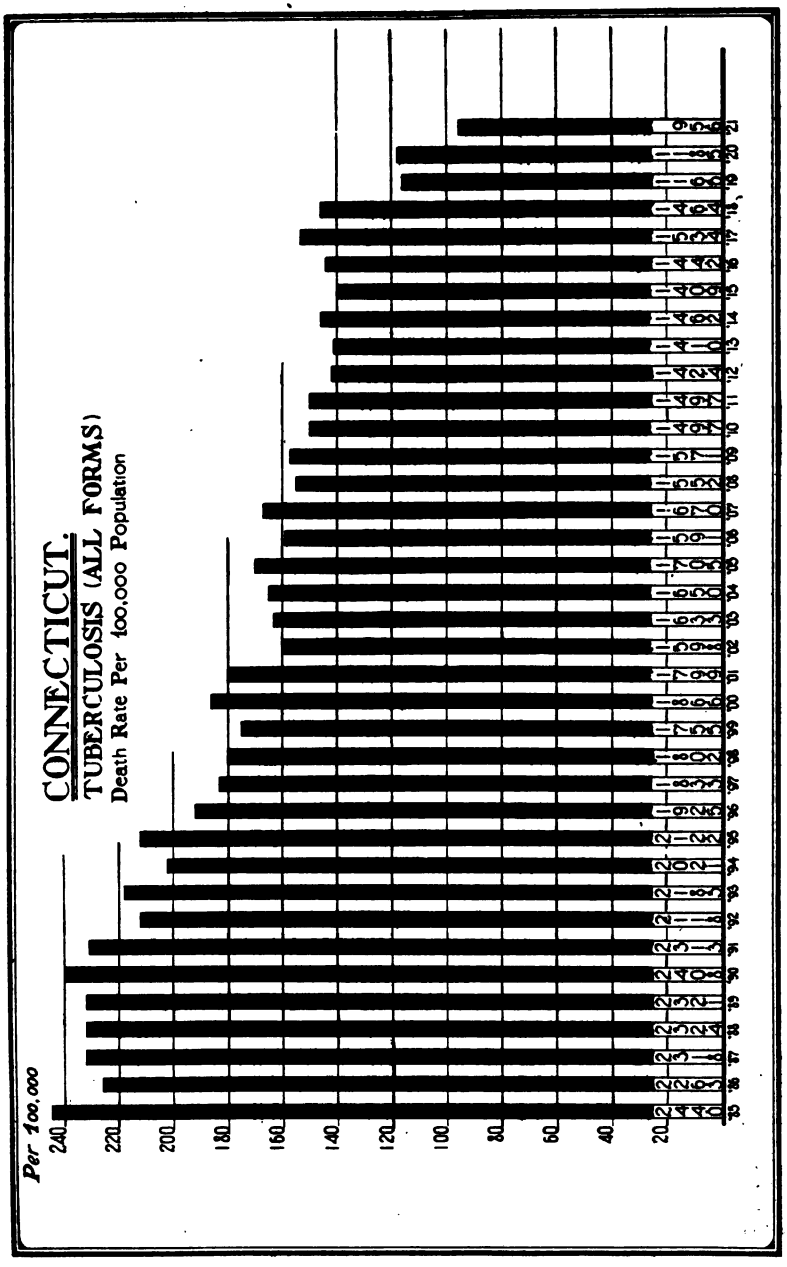
Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	195	*15.7*	15.7	20.0	17.4	16.4
1916	187	*14.5*	14.5	16.8	14.9	23.1
1917	234	*17.3*	16.5	22.1	16.8	24.6
1918	201	*14.3*	13.8	15.7	16.7	16.0
1919	253	*17.3*	14.7	14.7	19.0	19.4
1920	235	*16.9*	15.3	15.3	18.2	21.0
1921	176	*12.4*	——	15.6	16.1	——

SCARLET FEVER

1915—1921

Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	33	*2.7*	3.6	5.5	4.3	4.5
1916	30	*2.3*	3.3	3.5	2.0	5.0
1917	21	*1.5*	4.2	3.1	2.7	4.6
1918	36	*2.6*	3.0	2.0	3.0	3.9
1919	46	*3.1*	2.8	3.1	2.5	2.1
1920	74	*5.3*	4.6	5.5	4.3	4.1
1921	102	*7.2*	—	4.9	6.3	—

Digitized by Google



Digitized by Google

MEASLES

1915—1921

Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	54	*4.4*	5.4	7.4	8.8	10.0
1916	143	*11.1*	11.1	12.7	9.9	23.4
1917	126	*9.3*	14.3	10.0	9.0	11.8
1918	87	*6.2*	10.8	13.6	12.9	19.6
1919	100	*6.8*	3.9	4.7	3.4	2.5
1920	137	*9.8*	8.8	9.1	10.5	10.5
1921	43	*3.0*	—	4.6	3.9	——

WHOOPING COUGH

1915—1921

Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	149	*12.0*	8.1	12.8	7.7	18.7
1916	161	*12.5*	10.2	10.7	7.8	7.7
1917	113	*8.3*	10.4	6.3	8.6	7.8
1918	279	*19.8*	16.8	18.0	11.8	24.6
1919	58	*4.0*	5.5	8.1	2.8	15.2
1920	218	*15.6*	12.5	14.1	9.6	12.9
1921	137	*9.6*	——	5.2	7.1	——

POLIOMYELITIS

1915—1921

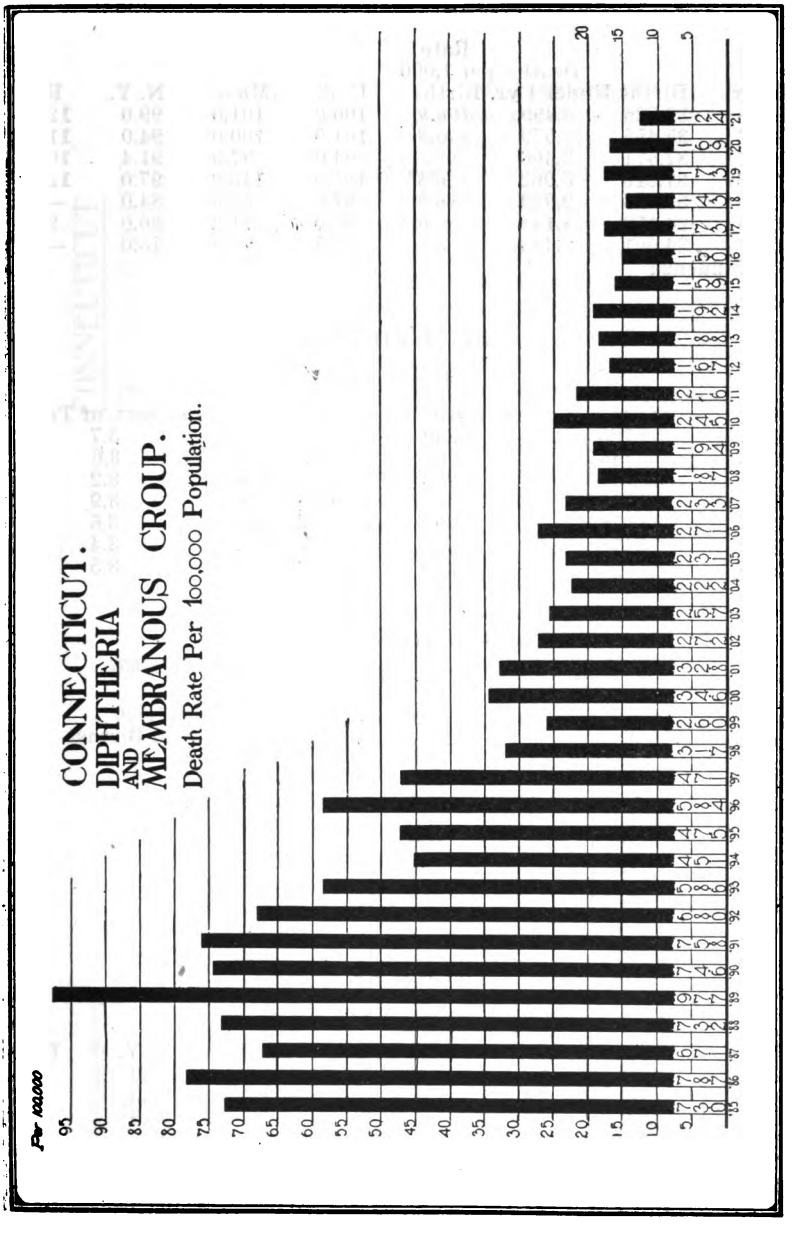
Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	10	*0.8*	1.0	1.1	0.7	1.2
1916	277	*21.4*	10.0	12.5	32.8	7.0
1917	16	*1.2*	1.6	1.3	1.1	1.1
1918	16	*1.1*	1.2	1.0	0.8	0.8
1919	10	*0.7*	—	0.4	0.3	0.2
1920	23	*1.7*	0.9	3.7	0.5	—
1921	25	*1.8*	—	1.2	2.5	—

EPIDEMIC CEREBROSPINAL MENINGITIS

1915—1921

Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	57	*4.6*	7.4	7.8	7.0	7.1
1916	71	*5.5*	7.1	8.6	6.2	8.6
1917	188	*13.9*	8.9	8.3	6.5	10.0
1918	77	*5.5*	9.2	8.9	7.4	9.8
1919	45	*3.1*	6.6	7.2	—	3.2
1920	63	*4.5*	6.0	7.1	1.8	6.1
1921	47	*3.3*	—	6.4	2.5	—

Digitized by Google



Digitized by Google

INFANT MORTALITY

1915—1921

Year	Births	Deaths Under 1 yr.	Rate per 1,000 Births	U. S.	Mass.	N. Y.	R. I.
1915	32,725	3,499	*106.9*	100.0	101.0	99.0	120.0
1916	35,455	3,579	*100.9*	101.0	100.0	94.0	111.0
1917	37,571	3,466	*92.3*	94.0	97.9	91.4	108.0
1918	37,216	3,962	*106.5**	101.0	113.0	97.0	126.0
1919	33,978	2,929	*86.2*	87.0	88.0	84.0	——
1920	34,178	3,144	*92.0*	86.0	91.2	86.0	94.0
1921	34,091	2,489	*73.0*	76.0	75.9	75.0	——

*Influenza

STILL BIRTHS

1915—1921

Year	Births	Still Births	Total	Per cent. of Total
1915	32,725	1,249	33,974	3.7
1916	34,455	1,310	36,765	3.6
1917	37,571	1,238	38,809	3.2
1918	37,216	1,513	38,729	3.9
1919	33,978	1,265	35,243	3.6
1920	34,178	1,217	35,395	3.4
1921	34,091	1,232	35,323	3.5

PUERPERAL DISEASES

1915—1921

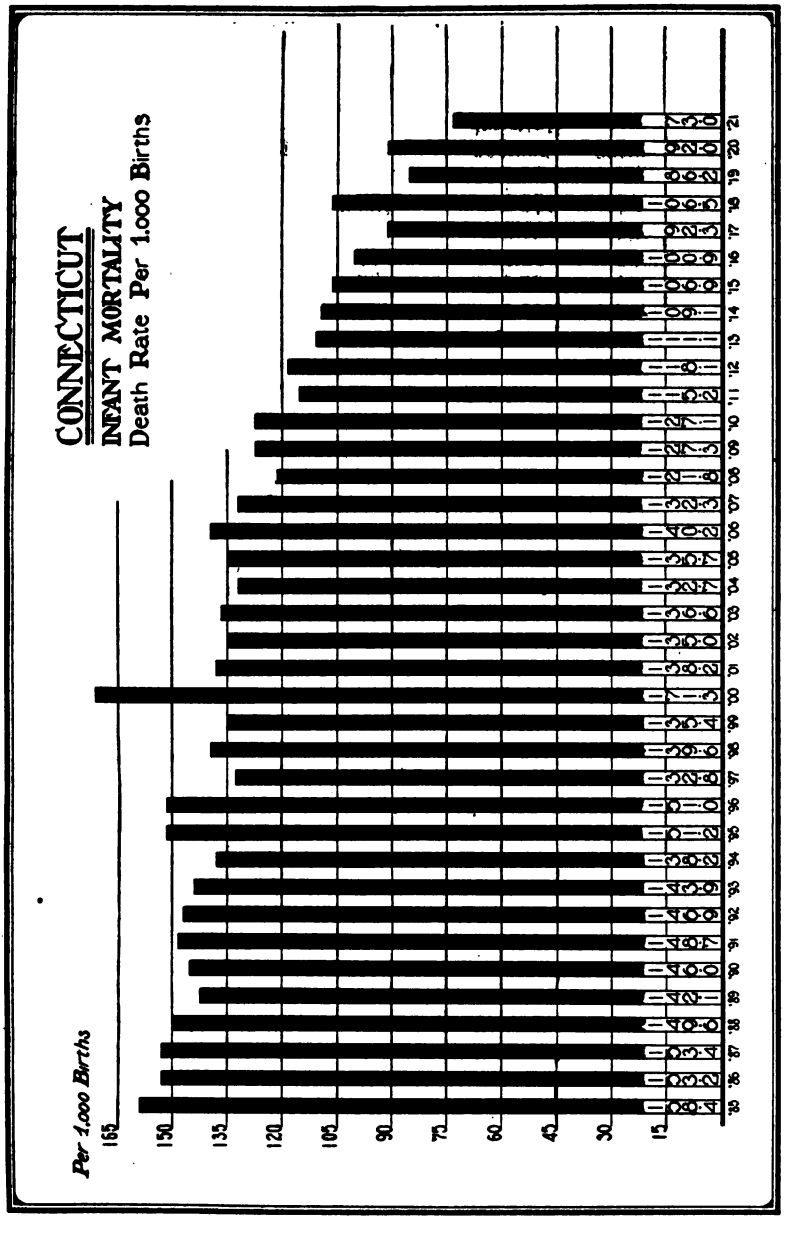
Year	Deaths	Rate per 1,000 Births and Still Births
1915	166	4.9
1916	155	4.2
1917	196	5.1
1918	176	4.5
1919	198	5.6
1920	194	5.5
1921	178	5.0

CANCER

1915—1921

Year	Deaths	Rate	U. S.	Mass.	N. Y.	R. I.
1915	1,124	*90.5*	81.1	104.0	92.0	92.1
1916	1,152	*89.2*	81.8	109.2	92.0	92.6
1917	1,213	*89.5*	81.6	108.3	93.6	95.4
1918	1,254	*89.0*	79.8	107.2	93.2	89.4
1919	1,288	*88.0*	80.5	103.2	92.8	91.6
1920	1,390	*99.8*	83.4	116.2	100.8	101.2
1921	1,383	*97.4*	——	119.0	104.6	——

Digitized by Google



Digitized by Google

ACCIDENT AND VIOLENCE

Suicide excepted

1915—1921

Year	Deaths	Rate per 100,000	U. S.	Mass.	N. Y.	R. I.
1915	992	*79.9*	83.3	——	——	——
1916	1,229	*95.1*	90.9	——	——	——
1917	1,494	*110.3*	108.8	——	——	——
1918	1,283	*91.0*	100.6	——	——	——
1919	1,068	*72.9*	79.5	——	——	——
1920	1,074	*77.1*	78.5	63.8	74.6	65.5
1921	1,026	*72.2*	——	61.7	71.6	——

Digitized by Google

EVALUATION OF HEALTH STATISTICS

Unfortunately the balance sheet of a health department showing lives saved and sickness reduced does not alone impress all with the fact that money spent for health work produces greater return for a dollar invested than any other public expenditure.

In the year 1921 approximately $2,000,000 was expended in Connecticut for the promotion of public health which resulted in saving or prolonging the lives of 4,700 people and in preventing many thousand cases of sickness.

Applying the methods of calculation promulgated by the National Conservation Commission, it is found that the lessened deaths and sickness represent a saving to the people of the state of over $10,000,000 for the year 1921, as compared with the losses sustained five years ago. The net profit on the $2,000,000 expenditure was $8,000,000.

There still remains a calculated preventable loss of $32,000,000 which can be eliminated if public sentiment and funds will sustain the endeavor.

The following tables indicate the methods of calculating the losses and gains from the principal diseases and the sums applied to health work in this state.

Digitized by Google

ANNUAL LOSS—PREVENTABLE DEATHS

Average for years 1915-1919

Cause	Average Deaths	Per cent Preventable	Deaths Preventable	Unit Valuation	Monetary Loss
Typhoid fever	98	99	97	$5,000	$475,000
Diphtheria	214	90	193	1,000	193,000
Scarlet fever	33	85	28	1,000	28,000
Measles	102	70	71	500	35,500
Whooping cough	152	70	106	500	53,000
Poliomyelitis	66	50	33	1,000	33,000
Meningitis	87	70	61	500	30,500
Smallpox	.2	99	.2	3,000	600
Malaria	6	95	6	3,000	18,000
Tuberculosis, pulmon.	1,608	80	1,286	5,000	6,430,000
Tuberculosis, other	251	80	201	3,000	603,000
Pneumonia, lobar	1,251	60	751	3,000	2,253,000
Influenza	365[a]	70	255	4,000	1,020,000
Venereal	853[b]	90	768	3,000	2,304,000
Total Communicable	*5,086*	*76*	*3,856*		*$13,476,600*
Diarrhoea, under 2	904	70	633	500	316,500
Bronchitis-pneumonia	861	50	430	2,000	860,000
Cancer	1,205	15	180	2,000	360,000
Circulatory	2,587[c]	30	776	1,500	1,164,000
Nervous	1,923[d]	35	673	1,500	1,009,500
Puerperal	178	70	125	3,000	375,000
Violence	1,206	50	603	3,000	1,809,000
All others	5,349	10	535	3,000	1,605,000
Total	**19,299**	**40**	**7,811**		**$20,975,600**

a Excluding Influenza epidemic figures.
b Reported Cases plus 10 per cent Circulatory and Nervous and 5 per cent All Other.
c Less 10 per cent deducted and added to Venereal.
d Less 5 per cent deducted and added to Venereal.

Digitized by Google

ANNUAL LOSS—PREVENTABLE DISABILITY

(Sickness and accident)

Average for years 1915-1919)

Loss in Income to Individuals

One-fourth population are wage-earners=350,000
Average days lost yearly from preventable causes=4
Average wage=$2.50
350,000×4×2.50= 3,500,000

Loss to Industry

It is accepted that the loss to industry in disorganization, idle overhead and lessened production is 2½ times the wage loss.
3,500,000×2½= 8,750,000

Medical Attendants

Two thousand physicians and surgeons with an average income of $3,000 devote one-half of their time to treating preventable disability.
2,000×3,000×½= 3,000,000

Nursing Service

Three thousand nurses with an average income of $1,000 are half employed on cases of preventable disability.
3,000×1,000×½= 1,500,000

Drugs and Accessories

1,400,000 people spend at least $3 per capita for drugs, etc., one-third for relief of preventable conditions.
1,400,000×3×1-3= 1,400,000

State Institutions (1919 Statistics)

Tuberculosis Sanatoria,=$604,000
Humane institutions—one-half for care of those afflicted with or suffering as a result of preventable illness.
2,700,000×½+604,000= 1,954,000

Total annual loss preventable disability **$20,104,000**

TOTAL

Preventable Deaths	$20,975,600
Preventable Disability	20,104,000
Total Annual loss—1915-1919	$41,079,600

Digitized by Google

THE 1921 ACCOUNT

	Preventable Loss		Savings Effected 1921	
Disease	Average Annual 1915-1919	1921	Gain	Loss
Typhoid Fever	$475,000	$240,000	$235,000	
Diphtheria	193,000	158,000	35,000	
Scarlet Fever	28,000	87,000		$59,000
Measles	35,500	15,000	20,500	
Whooping Cough	53,000	48,000	5,000	
Poliomyelitis	33,000	13,000	20,000	
Meningitis	30,500	16,500	14,000	
Smallpox	600		600	
Malaria	18,000	6,000	12,000	
Tuberculosis, Pulmon.	6,430,000	4,740,000	1,690,000	
Tuberculosis, Other Forms	603,000	414,000	189,000	
Pneumonia, Lobar	2,253,000	1,152,000	1,101,000	
Influenza	1,020,000	540,000	480,000	
Venereal	2,304,000	2,067,000	237,000	
Diarrhoea, Under 2	316,500	165,500	151,000	
Bronchitis-Pneumonia	860,000	700,000	160,000	
Cancer	360,000	414,000		54,000
Circulatory	1,164,000	1,030,500	133,500	
Nervous	1,009,500	894,000	115,000	
Puerperal	375,000	375,000		
Violence	1,809,000	1,536,000	273,000	
All Others	1,605,000	1,464,000	141,000	
Totals	20,975,600	16,075,500	5,013,100	113,000
Net Savings Represented by Lessened Deaths				**4,900,100**

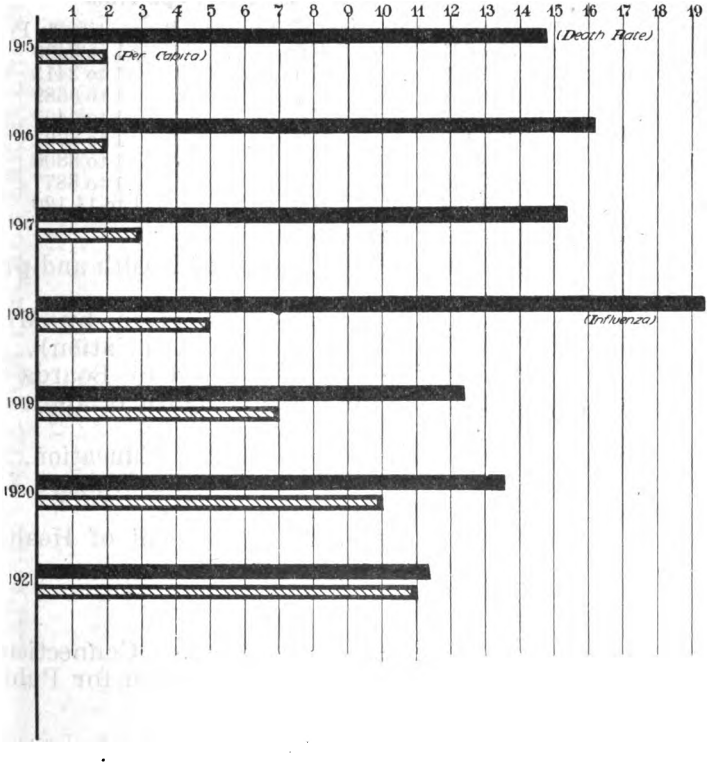
The previous table indicates that the saving effected in preventable disabilities is equivalent to that of preventable deaths.

The total saving for the year 1921 is therefore **$9,800,200.**

Digitized by Google

State Department of Health.
Bureau of Vital Statistics
William G. Wehrly, Director.

CONNECTICUT
DEATH RATES AND PER CAPITA HEALTH EXPENDITURE



Digitized by Google

EXPENDITURES FOR HEALTH WORK

1921

STATE	
Department of Health	$143,000
Tuberculosis Commission	786,000
Dairy and Food Commission	50,200
Commission on Domestic Animals	75,000
Factory Inspection Department	10,000
County Health Officers	13,500
LOCAL	
City and Town Health Departments	320,000
School Inspection (est.)	100,000
Private Health and Nursing Agencies (est.)	300,000
Private Welfare Organizations (est.)	200,000
Total	$1,997,700

Proportion of Public Health Nurses to Population

State	Population	*No. Pub. H. Nurses	Proportion to Pop.
Connecticut	1,380,631	406	1 to 3400
New Hampshire	443,728	130	1 to 3413
Massachusetts	3,877,382	1051	1 to 3689
New York	10,450,718	2370	1 to 4409
Rhode Island	655,450	139	1 to 4701
Vermont	352,246	40	1 to 8806
Pennsylvania	8,744,347	977	1 to 8877
Maine	769,334	69	1 to 11,120

Distribution of nurses in Connecticut:

239 doing generalized work with Boards of Health and private agencies.

75 industrial nurses (This figure was given by Miss Hardiman of the Industrial Nurses' Association).

80 school nurses, including those employed by Boards of Health and School Boards. (This figure is approximate).

3 nurses employed by the State Board of Education.

2 nurses employed by the Bureau of Child Welfare for inspection of boarding homes for babies.

7 nurses employed by the State Department of Health, four of whom have just been engaged.

406

The totals for the states listed above except Connecticut, were secured from the National Organization for Public Health Nursing.

*The totals given for each state include industrial and school nurses.

Information supplied by the Division of Public Health Nursing, State Department of Health, Hartford, Conn., September 26, 1922.

Digitized by Google

EXPENDITURES FOR FISCAL PERIOD ENDING JUNE 30, 1921

	1920 July 1-Sept. 30	1920 Oct. 1-Dec. 31	1921 Jan. 1-Mar. 31	1921 Apr. 1-June 30	Fiscal Period
General Administration	$2,466.47	$2,148.47	$2,534.09	$3,326.14	$10,475.17
Vital Statistics	2,301.67	2,002.02	2,818.15	3,200.24	10,322.08
Preventable Diseases	2,543.54	2,038.40	2,378.93	2,997.43	9,958.30
Child Hygiene	2,251.01	2,096.34	2,229.75	4,667.90	11,245.00
Laboratory	5,315.79	5,761.53	6,486.21	7,476.42	25,039.95
Engineering	2,275.12	1,967.02	2,302.10	4,540.34	11,084.58
Industrial Wastes	6.047.55	7,316.26	8,173.61	6,897.51	28,434.93
Antitoxin	2,571.14	5,377.50	3,512,48	4,415.53	15,876.65
Venereal Diseases	4,227.96	4,965.65	6,075.15	5,600.12	20,868.88
Laboratory Construction	948.42	0.00	0.00	0.00	948.42
Totals	$30,948.67	$33,673.19	$36,510.47	$43,121.63	$144,253.96

Digitized by Google

CLASSIFIED FINANCIAL STATEMENT

July 1, 1920 to June 30, 1921

	Administration	Preventable Diseases	Vital Statistics	Child Hygiene	Laboratory	Engineering	Industrial Wastes	Venereal Diseases	Antitoxin	Laboratory Construction
APPROPRIATIONS	$26,000.00	$22,000.00	$20,000.00	$25,000.00	$40,000.00	$20,000.00	$50,000.00	$36,656.17	$20,000.00	$100,000.00
Transferred	.....	.....	.....	5,000.00	.....	.....	.....	.....	.....	.....
Additions	1,600.00	1,300.00	4,544.02	.....	8,585.74	.....	.....	4,000.00	9,500.02	.....
Totals	$27,600.00	$23,300.00	$24,544.02	$20,000.00	$48,585.74	$20,000.00	$50,000.00	$40,656.17	$29,500.02	$100,000.00
EXPENDITURES:										
Salaries	$5,090.34	$5,804.66	$5,230.59	$6,500.99	$16,037.62	$5,364.64	$17,524.05	$15,335.48	$225.00	.....
Traveling Expenses	1,346.22	449.80	111.77	1,107 97	277.50	898.36	1,729.57	1,070.70	.....	.....
Auto Purchase & Equip.	1,288.18	902.89	268.69	331.34	885.00	2,614.26	2,746.15	80.81	.....	.....
Equipment	471.91	346.20	411.00	620.75	542.53	696.25	66.62	948.07	145.00	.....
Printing	797.37	1,305.46	3,062.72	1,524.76	341.25	684.80	1,459.90	452.41	.....	.....
Postage and Express	239.94	470.00	235.00	51.02	1,896.89	11.09	23.59	7.69	150.00	.....
Supplies	374.68	359.09	262.84	339.90	3,287.20	203.06	618.52	2,951.77	15,331.65	.....
Telephone and Wire	94.54	98.92	59.97	171.07	355.95	80.50	109.51	.....	.....	.....
Light	31.33	.....	3.00	41.62	279.59	25.08	149.42	.....	.....	.....
Service and Janitor	225.40	60.30	7.00	93.35	288.92	166.00	47.77	22.00	25.00	.....
Rent and Insurance	421.40	96.65	624.50	451.15	427.35	339.44	758.20	.....	.....	.....
Miscellaneous	93.86	64.23	45.00	11.08	420.15	1.10	3,201.63	.....	.....	$948.42
Totals	$10,475.17	$9,958.30	$10,322.08	$11,245.00	$25,039.95	$11,084.58	$28,434.93	$20,868.88	$15,876.65	$948.42
Total June 30, 1920	17,083.38	13,313.69	14,022.18	8,675.98	23,522.21	8,915.42	21,565.07	19,649.67	13,538.90	8,308.16
Balance July 1, 1921	$41.45	$28.01	$199.76	$79.02	$23.58	.....	.....	$187.62	$84.47	$95,748.42

Digitized by Google

EXPENDITURES FOR FISCAL PERIOD ENDING JUNE 30, 1922

	1921 July 1-Sept. 30	1921 Oct. 1-Dec. 31	1922 Jan. 1-Mar. 31	1922 Apr. 1-June 30	Fiscal Period
General Administration	$2,160.10	$2,639.99	$5,174.22	$3,517.32	$13,491.63
Vital Statistics	1,312.16	1,995.98	2,562.89	3,423.90	9,294.93
Preventable Diseases	2,337.50	3,373.70	2,634.90	4,733.48	13,079.58
Child Hygiene	2,151.71	3,075.73	2,583.44	4,572.24	12,383.12
Laboratory	5,066.49	6,282.09	6,965.17	5,803.63	24,117.38
Engineering	2,691.52	2,907.97	3,005.94	3,052.64	11,658.07
Antitoxin	6,094.82	4,306.73	9,346.38	5,402.52	25,150.45
Venereal Disease	1,980.66	2,516.68	1,765.22	915.47	7,178.03
Laboratory Construction	0.00	0.00	0.00	81.94	81.94
Mental Hygiene	261.99	773.71	760.29	713.31	2,509.30
Totals	$24,056.95	$27,872.58	$34,798.45	$32,216.45	$118,944.48

Digitized by Google

CLASSIFIED FINANCIAL STATEMENT

July 1, 1921 to June 30, 1922

	Administration	Antitoxin	Preventable Diseases	Vital Statistics	Sanitary Engineering	Laboratory	Child Hygiene	Venereal Diseases	Mental Hygiene	Laboratory Construction
APPROPRIATIONS	$31,000.00	$25,000.00	$30,000.00	$25,000.00	$25,000.00	$50,000.00	$36,000.00	$20,000.00	$6,000.00	$95,748.42
Additions	.....	10,000.00	.....	.....	.....	.....	.....	.....	.....	.....
Totals	$31,000.00	$35,000.00	$30,000.00	$25,000.00	$25,000.00	$50,000.00	$36,000.00	$20,000.00	$6,000.00	$95,748.42
EXPENDITURES:										
Salaries	$5,814.25	$275.00	$7,536.16	$7,668.69	$8,375.06	$17,715.36	$8,422.50	$3,145.39	$2,149.98	$81.94
Traveling Expenses	1,878.08	.....	854.04	22.60	675.91	368.05	795.18	537.74	224.19	.....
Equipment	2,024.34	.....	182.30	19.68	56.50	174.85	189.85	.....	63.45	.....
Supplies	2,261.81	24,620.45	3,713.70	1,344.97	1,809.54	3,652.48	1,725.78	3,359.90	68.00	.....
Postage and Express	405.37	230.00	490.00	87.32	50.68	843.82	226.47	.....	.....	.....
Telephone	111.02	.....	96.51	45.46	107.05	345.59	113.89	.....	.....	.....
Light	17.69	.....	6.30	.....	85.37	268.61	24.79	.....	.....	.....
Rent and Insurance	587.51	25.00	185.57	100.00	497.96	730.82	877.66	135.00	.....	.....
Miscellaneous	391.56	.....	15.00	6.21	.....	17.80	7.00	.....	3.68	.....
Totals	$13,491.63	$25,150.45	$13,079.58	$9,294.93	$11,658.07	$24,117.38	$12,383.12	$7,178.03	$2,509.30	$81.94
Balance June 30, 1922	$17,508.37	$9,849.55	$16,920.42	$15,705.07	$13,341.93	$25,882.62	$23,616.88	$12,821.97	$3,490.70	$95,666.58

Digitized by Google

DIVISION OF SUPPLIES

June 30, 1922

Digitized by Google

Digitized by Google

REPORT DIVISION OF SUPPLIES

To John T. Black, M. D.,

Commissioner of Health.

SIR: I have the honor to submit the following report of the Division of Supplies for the year 1922.

The following requisitions have been issued by the various Bureaus to the Division of Supplies:

Town Registrars, for birth, marriage and death record supplies.	600
Health Officers' supplies	1,800
Requisitions for biologics	1,300
Requisitions for supplies from supply houses	577

Biologics

The following biologics were issued during the year.

2,600	packages	1,000 units diphtheria antitoxin
3,200	"	5,000 " " "
3,800	"	10,000 " " "
650	"	10 doses each, Schick Test
800	"	Diphtheria toxin-antitoxin
2,700	"	1,500 units tetanus antitoxin
1,000	"	5,000 " " "
134,670	points	Vaccine Virus
1,300	packages	Typhoid Vaccine
11,536	treatments	Silver Nitrate
6,000	ampules	Neosalvarsan

Automobiles

The following table gives the year of manufacture, total mileage and total cost of upkeep for the automobiles for the past year:

Name	Year	Total Mileage	Original Cost	Present Value
Studebaker	1922	New	$2,059	$2,059
Buick	1920	38,000	1,560	600
Ford Coupe	1920	17,700	816	200
Hupmobile	1916	29,190	800	500
Dodge Tour.	1918	25,000	985	300
Franklin	1919	32,000	2,685	1,000
Ford Truck	1921	20,000	622	150
Dodge "	1921	6,200	1,120	800
Ford "	1921	2,000	585	300

In January we employed an automobile mechanic and while we have no figures as a comparison we feel that by the end of the year we will have effected considerable saving on account of making our own repairs. Disregarding any savings whatsoever we have the benefit of his

Digitized by Google

prompt service at any and all times for any emergency, which is quite an item, if the necessary repair is slight. This mechanic is used as a chauffeur and in helping out where needed, viz., when a large number of orders are received at any one time, helping, to get the morbidity report out promptly on Mondays, and in case the supply clerk is absent due to sickness or other reasons, he fills in very nicely.

We have been buying our tires during the past year at dealers' prices and find we have saved about 35%.

Prior to July, 1921, we were buying oil at the filling station by the quart and at the rate of $1.20 per gallon, and also the prevailing station price for gasoline. We have a contract with the Atlantic Refining Company to furnish us with gas at 3c under the service station price and by buying our oil in 30 gallon drums we get it for 50c per gallon. In all, our saving on gasoline and oil for the past year has amounted to about 20%.

I would recommend from a study of mileage costs of the automobiles, that after a car has been in the Department about eighteen months and run in the neighborhood of 20,000 miles, that it be turned in toward the purchase of a new car.

Printing

A considerable saving has been effected in printing. This has been brought about in a number of ways. First, all printing of any size is put out for bids and the work awarded to the firm submitting the lowest bid on our specifications, as we usually specify the particular make of stock, size of type, etc.; secondly, a saving has been effected by the substitution of paper more suitable for the particular need—for instance, we formerly printed our forms, S-2, 3, and 4, which are birth, marriage and death record certificates (8½ x 11 size) on a bond stock of a very good grade. We have substituted a ledger stock at about one-half to two-thirds the price we formerly paid and as ledger paper has a harder finish than bond paper, in writing these longhand, the pen does not pick up the paper, and we have had a number of comments from Registrars on the improvement. Also, in the way of plain stock for office use, we formerly had from ten to fifteen different grades and makes of paper, some of them costing as high as 35c per lb., and none of them cheaper than 25c per lb. We have standardized all this material having the various bureaus use the

Digitized by Google

same grade of stock and miscellaneous paper used in the office for writing reports, preliminary reports, etc., is a cheaper grade of paper costing us 15c per lb. Also in issuing this paper, we inquire what it is to be used for and accordingly issue the proper paper. A large saving in the amount of printing of standard forms has also been made, due to the fact that all requisitions for supplies are checked over and if a Registrar requests what we think an undue large amount of supplies, we check him off on his incoming reports with the outgoing supplies and write him as to what is going on.

A considerable saving has been made in the purchase of office supplies. We have made a study of the various carbon papers manufactured and find that from the cheapest paper to the most expensive paper there is a difference of about three and one-half cents per sheet. In submitting the various grades of paper to the stenographers for their opinion as to which is the best paper, we have found in most cases that the stenographers have returned to us as the best paper in their opinion, the cheapest grade. This is explained by the fact that more expensive papers are very thin tissue which wrinkle and curl easily, while the cheaper papers are a much heavier tissue.

In the matter of pencils, we again effect a saving of about 20% due to buying pencils made by the best pencil manufacturer in the country—although it is not advertised as much as other firms.

Stock Keeping

We have, since moving into our new stock room, revised our system of form numbers, throwing out or scrapping all obsolete forms and changing the numbers so that we now have in the neighborhood of sixty forms in the Bureau of Administration; sixty-five in the Bureau of Preventable Diseases; Bureau of Child Hygiene and Public Health Nursing form numbers have increased from seven to twenty-eight; Bureau of Engineering has about twenty forms; Bureau of Vital Statistics have been reduced from about ninety forms to sixty; Division of Venereal Diseases has twenty forms. (This was formerly included under the Bureau of Preventable Diseases.) The Division of Mental Hygiene has eight forms. (This was also formerly included in the Bureau of Preventable Diseases). Medical Practice forms have been taken from the Bureau of Administration and made into forms under this Division, and we now have

Digitized by Google

about eight forms. We find that in having the forms of each Bureau or Division separately marked, it is very much easier for the stockman to supply just what is wanted. For instance, some time ago, a stenographer in one of the Bureaus requested one hundred each of all bulletins of the Bureau of Preventable Diseases. She did not mean what her order called for. She wanted one hundred each of the bulletins on diphtheria, scarlet fever, tuberculosis, measles, and whooping cough. If we had filled this order and sent it out as per her first instructions, we would have sent about twice the number required, as we have bulletins on the House Rat, House Fly, Smallpox Peril, and similar subjects which also come under the Bureau of Preventable Diseases. Hence by having the requisitions call for exactly what is wanted, using the form number, the correct supplies are issued and much time is saved.

Considerable time is required due to conditions which have existed for some time on account of the fact that the large supply of biologics is kept at P. Berry and Son's warehouse, and only a daily working supply kept in an icebox in the cellar of the Capitol. This difficulty, we are very glad to say, will be overcome, as the Superintendent of Buildings is installing an automatic refrigerator big enough to keep our entire supply of biologics in our stock room. This will also be a big accommodation in case of orders on Sundays or holidays as P. Berry & Sons are always closed on these days and it is impossible to get into their warehouse should a large demand be made on us for supplies.

Inventory

An inventory of the entire department was again made July 1st, 1922 and the value of the office equipment, automobiles, laboratory equipment and supplies found to be as follows:

Office Furniture and equipment	$18,322
Automobiles	5,798
Printed Supplies	10,514
	$34,134

Digitized by Google

Publicity

We have had many calls for the various films throughout the year and have been able to supply them as demanded. Also the attractoscope was used in health work at New Haven, once at Southington, New Britain, Charter Oak Park Fair, Hartford, Bristol and Wethersfield. We have recently had the entire list of physicians put up as a mailing list and have mailed information to them during the year. The morbidity report mailing list has increased about two hundred addresses during the past year.

Respectfully submitted,

I. B. CRILLY,

Chief, Division of Supplies.

Digitized by Google

Digitized by Google

DIVISION OF MEDICAL REGISTRATION

June 1, 1920--July 30, 1922

Digitized by Google

Digitized by Google

REPORT DIVISION OF MEDICAL REGISTRATION

To John T. Black, M. D.,

State Commissioner of Health,

Sir: I have the honor to submit the following report of the Division of Medical Registration for the biennial period ending June 30, 1922.

Licenses were issued to 168 physicians and 9 midwives between July 1, 1920 and June 30, 1921. Of this number 108 were granted to physicians examined by the Regular Board, 53 were granted to physicians examined by the Eclectic Board and 7 to physicians examined by the Homeopathic Board.

Six cases of illegal practice of medicine were referred to the County Health Officer for investigation and prosecution.

A statement of the Medical Practice Account for this period is given below:

Medical Practice Account

July 1, 1920—June 30, 1921

Balance in bank, July 1, 1920		$452.05	
License fees, 177 licenses		354.00	
			$806.05
Expenditures (see vouchers)			
Typewriter repairs	$ 43.15		
Printing	79.25		
Salary, clerk	125.00		
Engrossing	78.50	325.90	
Balance, July 1, 1921		480.15	$806.05

From July 1, 1920 to June 30, 1922, licenses were issued to 146 physicians and 12 midwives. Seventy-five of these licenses were granted to physicians examined by the Regular Board, 60 to physicians examined by the Eclectic Board and 10 physicians examined by the Homeopathic Board.

One special license was granted under instructions from the Attorney General. The physician to whom this license was issued claimed that he was admitted to practice in Connecticut under the provisions of the Medical Practice Act of 1893 and that he registered his papers at that time with the Town Clerk of Essex. As no record of this registration appeared in the office of the State Depart-

Digitized by Google

ment of Health or in the Town Clerk's office in Essex, the physician applied to the Legislature for the validation of this omission. Under Sec. 40, Chap. 401, Public Acts of 1921, the Town Clerk of Essex was authorized to receive and record a certificate of registration such as was required from practitioners of medicine by laws of Connecticut in force in 1893, which certificate was issued by this Department in accordance with the Attorney General's instructions.

Six cases of illegal practice of medicine were referred to the County Health Officers for investigation. Three cases were also referred to the State Police.

A statement of the Medical Practice Account covering this period is as follows:

Medical Practice Account

July 1, 1921—June 30, 1922.

Balance in bank, July 1, 1921		$480.15	
License fees, 158 licenses		316.00	$796.15
Expenditures (see vouchers)			
Printing	$113.75		
Engrossing	111.00		
Supplies	27.08		
Equipment	208.26		
Town clerks' fees (1921-1922)	83.75	543.84	
Balance, July 1, 1922		252.31	$796.15

The law requiring the annual registration of all "persons licensed to practice the healing arts" has been of great assistance to this division in its endeavor to compile a directory of medical practitioners in Connecticut. Only 90 of the 1,668 physicians practicing in this state have failed to register for the year 1922. The annual registration of midwives has not been so successful, but it is expected that better results will be obtained next year as the Federal funds granted by the Sheppard-Towner Act have made it possible for the Bureau of Child Hygiene to take up the active supervision of midwives and their work in connection with the enlarged program for maternal and infant welfare in Connecticut.

The lists of physicians and midwives licensed during the fiscal period are appended.

Respectfully submitted,
FRANCES P. MERRILL,
Chief, Division of Medical Registration.

September 2, 1922.

Digitized by Google

PHYSICIANS LICENSED

CONNECTICUT MEDICAL EXAMINING BOARD

July 1, 1920 to June 30, 1921

Allen, Harry E. .....Waterbury
Alu, Anthony F. .....Ansonia
Apelian, Albert S. .....New Haven
Baretz, Louis H. .....New Haven
Black, Ellis M. .....Greenwich
Bluestone, David H. .....Hartford
Booe, John G. .....Bridgeport
Brenner, Oscar .....New Haven
Bresnahan, John F. .....Bridgeport
Brathwaite, Frederick G.....Darien
Bulbul, Garo .....Hartford
Capecelatro, Alfonzo .....New Haven
Cappiello, Silvestro .....Hartford
Caulfield, Ernest J. .....Hartford
Chandler, Fremont A. .....Hartford
Chandler, Henry M. .....Middletown
Chandler, Jennie A. .....Middletown
Condron, Frank M. .....Bridgeport
Conroy, Michael J. .....Greenwich
Costanzo, Ralph E. .....Stamford
Cozzolino, James A. .....New Haven
Craig, George M. .....Hartford
Crandon, LeRoi G. .....New London
Cranz, Alwin H. .....Middletown
Creadick, A. Nowell .....New Haven
Crouch, Elmer L. .....Stamford
Dinsmore, William W. .....Hartford
Donnelly, John T. .....New Britain
Draper, Joseph W. .....Orange
Dunham, Ethel C. .....New Haven
Eaton, Henry Douglas ....Ridgefield
Fabricius, Julius R. .....Greenwich
Farnum, Louise W. .....New Haven
Felt, Paul R. .....Middletown
Felty, Augustus R. .....Hartford
Ferguson, Roy C. .....Hartford
Fitch, William E. .....Danbury
Freedman, Barnett P. ....New Haven
Gaberman, David .....Hartford
Gaucher, Lorenzo L. .....Bridgeport
Genest, Aloria H. .....Hartford
Giannotti, Carl C. .....New Haven
Gibson, Cole B. .....Meriden
Greenberg, Philip .....New Haven
Greenway, James C. .....New Haven
Guijarro, Anthony .....Hartford
Hall, Crowell C. .....Hartford
Harnden, Frank .....Hartford
Harris, William .....New London
Hendel, Isidore .....New London
Hersey, Harold W. .....New Haven
Howard, Albert J. .....New Haven
Jennings, Walter B. .....Stamford
Joyce, William M. .....Middletown
Kaufman, Charles E. .....Orange
Knapp, Robert P. .....Manchester
Knowlton, Florence H. ....Bridgeport
Koppel, William .....Enfield
Kornblut, Alfred .....Bridgeport
Landry, Benedict B. .....Bristol
LaPointe, Lionel L. .....New Haven
Lekston, Roman F. .....Enfield
LeLasher, Clement P. .....Bridgeport
Lewis, Robert M. .....Hartford
Margulis, Abraham .....New Haven
McCreery, John A. .....Greenwich
McDonald, Wm., Jr., ...New Haven
McDonnell, Ralph E. .....New Haven
McGrath, James B. .....Greenwich
McLean, John C. J. .....Hartford
McMahon, Wm. H. .....Norwalk
Moran, Arthur B. .....Willimantic
Nichols, Charles W. .....Bridgeport
O'Brasky, George H. ....New Haven
O'Brien, Francis J. .....Ansonia
Page, Charles W. .....Hartford
Phillips, Karl T. .....Putnam
Radom, Elizabeth .....Hartford
Roberts, Bertrand E. .....Waterbury
Rudnick, Charles J. .....Bridgeport
Ryder, Wm. H. .....New Haven
St. John, Leopold A. .....Hartford
Sanderson, Roy V. .....Hartford
Scheiber, Leo .....Bridgeport
Scoville, Helen M. .....New Haven
Sexton, Lewis A. .....Hartford
Sherwood, Arthur W. .....Hartford
Silver, Harry .....New Haven
Slaughter, William H.....Greenwich
Storrs, Ralph W. .....Hartford
Tennen, Joseph S. .....Norwich
Thayer, Ralph B. .....Enfield
Tolk, Nathan R. .....Bridgeport
Toole, John E. .....Branford
Tucker. George E. .....West Hartford
Urba, Edward F. .....Waterbury
Wadsworth, Ruth F. .....Stamford
Walker, Wilmarth B. .....Hartford
Waskowitz, David .....New Britain
Weiner, Joseph .....New Haven
Weise, Ellwood C. .....Bridgeport
Wight, Winfield E. .....Waterbury
Wilson, James A. .....Hartford
Winternitz, Milton C.....New Haven
Winters, Sidney .....New Haven
Wiseman, John I. .....Middletown
Wiseman, Katherine .....Middletown
Wright, William W. .....Hartford

Digitized by Google

CONNECTICUT MEDICAL EXAMINING BOARD

July 1,1921 to June 30, 1922.

Blake, Francis G. .....New Haven
Blumenthal, Herman J. ....New Haven
Boardman, Emma I. .....New Haven
Bridge, Ezra .....New Haven
Cascio, Joseph E. .....Ansonia
Chapman, Edward N. ....New London
Childs, Albert E. .....Litchfield
Coon, Wm. H. .....Bridgeport
Drake, Percy G. .....Hartford
Duffy, Wm. C. .....New Haven
Dumphy, John J. .....Hartford
Eagan, Joseph T. .....New Haven
Errico, Louis .....New Haven
Fairing, John W. .....Hartford
Federkiewicz, John .....Enfield
Finn, Alfred J. .....Waterbury
Frey, Walter G. .....Greenwich
Funkhouser, Selmes P.....Hartford
Garcia, Alphonse G. .....Waterbury
Garner, Vaughn C. .....Bridgeport
Gay-Lord, Lyman W. .....Cheshire
Graves, Gaylord W. .....Salisbury
Graves, James C., Jr.....West Hartford
Gray, Harrison .....Norwich
Greenhouse, Barnett .....New Haven
Guarini, Cesidio A. .....Enfield
Haskins, Mary G. .....Bridgewater
Hennesey, James F. .....Stamford
Herrmann, Julian B. ....West Haven
Higgins, Francis J. .....Hartford
Hill, Wm. E. .....Waterbury
Hinchey, Richard J. .....Waterbury
Ingraham, A. Elizabeth....East Lyme
Katz, Henry .....Hartford
Katzman, Samuel S. .....Hartford
Kelman, Sarah R. .....New Haven
Kerley, Charles G. .....Sharon
Kupelian, Moses O. .....New Britain
Labensky, Alfred .....New London
Lane, John T. .....Hartford
Maxwell, John A. .....Winchester
Moore, Wilbur J. .....Watertown
Morton, John J., Jr. .....New Haven
Murphy, Arthur J. .....Waterbury
Murphy, Owen L. .....Hartford
Neid, Walter S. .....Greenwich
O'Connell, John T. .....Colchester
Osborn, Stanley H. .....Hartford
Park, Edward A. .....New Haven
Pearson, Mabel H.....Bridgewater
Polito, Frank L. .....Bridgeport
Rabinovitch, Alex. .....Norwich
Resnik, Wm. H. .....New Haven
Robinson, Wilfred J. T.....New Britain
Ruby, Max H. .....Waterbury
Savage, Philip, J. .....New London
Schiffman, Emanuel A. ....New Haven
Scudder, Winthrop D. .....Hartford
Serafin, Peter J. .....New Haven
Shea, Michael S. .....Colchester
Silverberg, Samuel J. .....Hartford
Smith, Vincent J. .....New Britain
Stander, Henricus J. .....Hartford
Stoughton, Dwight H. .....Hartford
Teplitz, Max M. .....Norwich
Thomas, John J. .....Ansonia
Tokarczyk, John J. ....Windsor Locks
Tutles, Amelia V. .....New Britain
Van Allen, Chester M. ....New Haven
Wakeman, Ella C. .....New Haven
Wellington, Harold W...New London
Wentworth, John A. .....Hartford
Whitney, Ray L. .....Cromwell
Whittles, Lee J. .....Hartford
Wilkinson, Henry F. .....Hartford
*Rasquier, Theodore .....Essex

*Licensed by authority of legislative enactment.

Chap. 401, Sec. 40. Public Acts of 1921.

"The town clerk of the town of Essex is hereby authorized to receive and record a certificate of registration such as was required from practitioners of medicine by the laws of the state in force on the first day of July, 1893, from Theodore Rasquier of New London, who, on said first day of July, 1893, filed such a certificate with the town clerk of said town of Essex, which certificate does not appear of record in said town; and the filing and recording of such certificate, as and for said date, is hereby validated and confirmed and made of the same force and effect as though the same had been duly recorded in the records of said town, provided such certificate is filed on or before August 1, 1921."

Digitized by Google

HOMEOPATHIC MEDICAL EXAMINING BOARD.

July 1, 1920 to June 30, 1921

Beardslee, Frederick N.....Greenwich
Coles, Ruth B. .....Mansfield
DeFeo, Charles Peter .....New Haven
Keeler, Maxwell G. .....Stamford
Kleinman, Elizabeth Z.....Norwich
Philipson, Samuel .....New Haven
Sword, Brian C. .....Guilford

HOMEOPATHIC MEDICAL EXAMINING BOARD

July 1, 1921 to June 30, 1922.

Bowman, Stuart H. .....Stamford
Bryan, Kathryn M. E. .....Preston
Davis, Eugene .....Greenwich
Downing, Perley E. .....Hartford
Kingsbury, Edward N. .....Hamden
Shenk, Frederick P. .....Norwich
Sherman, Herbert deG. ....Greenwich
Weir, Loren R. .....Greenwich
White, John F. .....Greenwich
Wienski, John C. .....Stamford

ECLECTIC MEDICAL EXAMINING BOARD

July 1, 1920 to June 30, 1921

Adlerman, Theodore D. ....Bridgeport
Alexander, Date R. .....Bridgeport
Bagby, Roland O. .....Hartford
Beard, Calvin .....Bridgeport
Beardsley, Frank J.....Stonington
Boone, Richard F. .....Bridgeport
Brandenstein, Von, Erich....Hartford
Brinkley, John R. .....Hartford
Brinkley, Minnie T. .....Hartford
Buehler, John B. .....Greenwich
Burstan, Maurice B. .....Hartford
Bush, Andrew R. .....Bridgeport
Bush, James W. .....New Britain
Carlson, Edward J. .....Bridgeport
Carter, Hedley V. .....Hartford
Cohan, Abraham .....Hartford
Cotner, James W. .....Bridgeport
Cotner, Jennie S. .....Stratford
Covey, Russell E. .....Hartford
Daniel, Archie L. .....Hartford
Desaunier, Leon F. .....Hartford
Ellis, Clinton B. .....Hartford
Feldman, Max .....Hartford
Feldman, William .....Hartford
Goodwin, Allie J. .....Berlin
Hammie, Robert P.....New Haven
Hammond, Paul L. .....Hartford
Hedge, Mayro O. .....Bridgeport
Hopper, Ernest P. .....Bridgeport
Hraba, John .....Greenwich
Hubbard, John .....Greenwich
Jackson, Howard M. .....Hartford
Johnson, Ora A. .....Bridgeport
Kaplan, Morris .....Enfield
Kelso, James .....Bridgeport
Kleinwachter, Adolph .....Hartford
Krall, Adolph M. .....Hartford
Kram, Elias .....Hartford
Long, Ralph F. .....Hartford
McNarry, Earl W. .....Hartford
Miller, George H. .....Hartford
Richardson, John W. .....Bridgeport
Schantz, George .....Waterbury
Schantz, Marcus .....New Haven
Schirmer, Jacob S. .....Shelton
Scott, Morgan H.....Hartford
Sharp, Bess W. .....Bridgeport
Sutcliffe, George .....Hartford
Teubel, Edward C. .....Bridgeport
Tuttle, Frances A. .....Greenwich
Tuttle, Lamar K. .....Greenwich
Wheeler, Howard M. .....Bridgeport
Yochelman, Isidore .....New Haven

Digitized by Google

ECLECTIC MEDICAL EXAMINING BOARD

July 1, 1921 to June 30, 1922.

Alban, Emil J. .....Bridgeport
Ash, Alma S. .....Hartford
Barnes, Benjamin F. .....Greenwich
Berlin, Joseph I .....Stamford
Braverman, Harry .....Greenwich
Bruce, John W. .....Stratford
Campo, Anthony R. .....Stamford
Chaimson, Harry .....Enfield
Christian, James A. .....Hartford
Cleveland, Harold F. .....Enfield
Coppola, Modestino .....Hartford
Cowan, Clyde R. .....Enfield
Cuono, Frederick A. .....Greenwich
Ematrudo, Frederick R.....New Haven
Ferri, Nicholas A. .....Hartford
Flagg, Franklin I. .....Enfield
Flynn, James J. .....Hartford
Gittens, Oscar F. .....Waterbury
Golstein, Anna .....Hartford
Green, Will J. .....Hartford
Hatten, Sebastian C. .....Bridgeport
Hird, Frank E. .....Hartford
Hoshizaki, Kin Jiro .....Hartford
Hunter, LaFayette McC. ....Hartford
Kesten, Edward A. .....Hartford
Killalee, Frederick J. .....Hartford
Koraitis, Peter K. .....New Haven
Lain, Clarence E. .....Hartford
Ledebur, Wilbur T. .....Norwalk
Lerner, Samuel .....Greenwich
Leven, Aaron S. .....Hartford
Levy, Wm. .....Greenwich
Lilienthal, Samuel .....Greenwich
Linehan, Catherine .....Greenwich
Lingo, Wm. B. .....Hartford
Martin, Orel F. .....Enfield
McGoff, Joseph W. .....Enfield
Miczoll, Konstantine P. .....Hartford
Mower, Etamar A. .....Hartford
Mulford, George S. .....Stamford
O'Connell, W. F. .....Bridgeport
Pendola, Anthony S. .....Enfield
Perry, John O. .....Ridgefield
Petty, Walter J. .....Hartford
Phillimore, Frederick G. .....Enfield
Prisque, Raymond D. .....Hartford
Robinson, Monte Val .....Hartford
Rogers, Robert W. .....Hartford
Shattuck, Roy H. .....Enfield
Shoollin, Samuel F. .....Hartford
Slabotsky, Samuel .....Stratford
Slobins, Simon H. .....Enfield
Steward, Chas. M. .....Hartford
Stewart, Donald W. .....Waterbury
Tetrault, Philias E. .....Putnam
Vander Put, Adrianus .....Hartford
Warden, Lawrence M. .....Hartford
Works, Fred H. .....Enfield
Zeitler, Walter A. .....Hartford
Zeitler, Wm. T. .....Hartford

MIDWIVES LICENSED

CONNECTICUT BOARD OF EXAMINERS OF MIDWIVES.

July 1, 1920 to June 30, 1921.

Boccia, Agnes .....New Haven
Cornero, Rosina .....New Haven
Garabedian, Hosanna A...New Britain
Krupa, Veronica .....Meriden
Larizzo, Josephine .....New Britain
Maltesi, Antonia .....Hartford
Mazzola, Pasqualina .....Ansonia
Petrosemolo, Regina .....New Haven
Ribeiro, Angela C. A. .....Waterbury

CONNECTICUT BOARD OF EXAMINERS OF MIDWIVES.

July 1, 1921 to June 30, 1922.

Africano, Ermina V.....Windsor Locks
Amore, Mary .....New Haven
Bires, Julia P. .....Bridgeport
Ceppetelli, Maria .....Hartford
Coletti, Cesidia M. .....Bridgeport
Gamberdella, Lucy .....New Haven
Giangrande, Mollie .....New Haven
Humphrey, Maria A. .....New Haven
Izzo, Mary C. .....New Haven
LeBlanc, Victoria .....New Haven
Reisinger, Helene .....Waterbury
Strano, Anna M. .....Torrington

Digitized by Google

BUREAU OF PREVENTABLE DISEASES

FOR THE YEAR 1920

Digitized by Google

Digitized by Google

REPORT OF BUREAU OF PREVENTABLE DISEASES

John T. Black, M. D., State Commissioner of Health, Hartford, Connecticut.

Sir:—I submit herewith the following report for the Bureau of Preventable Diseases for the year ending December 31, 1920.

On February 1st, Dr. T. Eben Reeks, the Director of the Bureau, resigned to take up work in the industrial field. The Epidemiologist, Dr. Ellis K. Devitt, served as Acting Director of the Bureau until April 31st and resigned May 31st to resume his private practice.

Other changes in the personnel of the Bureau are as follows: Miss Delia A. Haugh, stenographer, resigned on April 1st and her place was filled by Miss F. M. Thompson. Miss Irene Gibson, statistician, resigned on September 1st and her place was filled by Miss Mollie A. Miskill, a clerk in the Department. Miss Elsie E. Burgey was added as clerk on November 29th.

The work of the Bureau of Preventable Diseases during 1920 has followed the general trend as outlined when the reorganization of the board occurred in 1917.

The change in the method of reporting of disease, from a weekly and monthly to a daily basis was given the greatest support by practically all local health officers in Connecticut, furnishing the Department with a daily survey of the general incidence of disease throughout the state.

This has increased in value as the physicians, superintendents of institutions, school teachers, public health nurses and others became aware of the value of the regulations of the Sanitary Code, and reported more promptly the cases of disease, or suspected cases, under their care or in their charge, to the local health officers.

The work of the Bureau has been necessarily limited in certain lines of action, but one service—that of furnishing aid to health officers on request—has always been answered, except in those rare instances when it was physically impossible for the director to do so.

During the year the chief objective has been to co-operate with health officers in seeking the source of all outbreaks of disease and to shut off this source, in order that further cases of disease might be prevented. Special investigations and effort were instituted in the control of typhoid fever, diphtheria, anthrax, epidemic encephalitis, tetanus, rabies, and disease on premises where milk is handled, which will be considered separately under these diseases.

Digitized by Google

Yearly Statistics

Due to war conditions, the rates given in the 1918-19 biennial report were based on the population as estimated from the State school census. The federal census was again taken in 1920 and rates in this report are based on the federal census of 1,114,756 in 1910 and of 1,379,632 in 1920, which gives the State a population of 1,393,292 as estimated for July 1, 1920.

General Discussion of Disease Prevalence

During 1920 there were more cases of diphtheria, scarlet fever and whooping cough reported than ever before in the history of the State, and it is felt that while these diseases were epidemic to a certain extent in Connecticut, a part of the increase in the number of reported cases was due to more systematic reporting and greater interest shown, in the reporting of cases by physicians and householders than heretofore.

The influenza epidemic of 1918-19 recurred during January and February, but was accompanied by fewer fatalities than the previous epidemic.

Measles, periodically every four or five years, has an increased incidence, and in 1920 this came about, more cases being reported than any year since 1916.

Typhoid fever, on the other hand, remained practically constant as compared with 1919, the lowest year of the incidence of this disease the state has ever known.

Tuberculosis is a disease about which we have not yet apparently accurate statistics in Connecticut. It seems that until it is more completely reported, it will be impossible for local boards of health to take the necessary measures to prevent the spread of this disease in a community, by investigating the individual cases in their homes. This follow-up work of health officers and nurses in explaining to tuberculosis cases the manner in which they are a menace to other persons in the family or others they may meet, is a most important work.

During the year considerable work was done in co-operation with the local health officers in handling all stages of disease prevention, particularly in typhoid fever, diphtheria, scarlet fever, smallpox and encephalitis, and it is hoped that the local health officers will continue to call on the Bureau for this aid.

The State Department of Health, by being cognizant of

Digitized by Google

disease in all sections of the State, has been able at times, to notify communities of possible carriers or cases of disease which have entered their boundaries from other places, before the local health officer knew of the presence of the case. It is this type of assistance the State Department is attempting to increase, and can if all communities will co-operate in reporting to the Department.

It is not felt that complete reports of any disease except possibly the rarer diseases, as anthrax, and rabies, are being received at the present time by health officers from physicians and citizens, for reference to death certificates, discloses persons dying of reportable diseases, although the health officer was not notified. A marked improvement in reporting has been noticed recently, and physicians and householders are appreciating more and more the importance of the prompt and complete reporting of disease, in order that all foci of disease can be isolated and quarantined, effectually stopping impending outbreaks and epidemics.

In the case of certain diseases as typhoid, smallpox, epidemic encephalitis and anthrax, detailed epidemiological case records were issued to health officers to assist in ascertaining the cause and to prevent the spread of these diseases.

A blank for reporting cases of disease on the premises of milk handlers such as on farms, at milk depots, pasteurizing plants and similar places was prepared for health officers. This blank was designed to obtain a better reporting of the cases of disease existing on premises where milk is handled, mentioned in regulation 17 of the Sanitary Code. Investigation of milk supplies were carried out in Rockville, Greenwich, New Haven, Windsor, North Haven, Danbury, Simsbury, Wallingford, Hartford, Suffield and Enfield where milk was suspected as a possible source of spreading disease.

It is hoped that in a few years Connecticut will stand at the top in the reporting of diseases, for if so, then—and then only—can full advantage be taken of our knowledge to practise preventive medicine and prevent the spread of communicable diseases.

There were 54,747 cases of communicable disease reported during the calendar year 1920, and the comparison of disease incidence for this year with the previous years may be seen in the table on page 119. For the sake of a better comparison, influenza, lobar pneumonia, gonorrhoea and syphilis are listed separately.

Digitized by Google

INCIDENCE OF REPORTABLE DISEASES BY MONTH, 1920

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Anthrax	—	—	—	—	—	—	—	1	—	—	—	—	1
Cerebrospinal Meningitis	8	9	11	5	9	6	9	10	3	11	6	4	91
Chickenpox	379	182	109	134	157	92	45	18	4	62	109	175	1,466
Conjunctivitis Infectious	1	2	2	—	—	1	1	1	—	1	—	1	10
Diphtheria	429	281	292	292	245	156	148	162	190	410	574	575	3,754
Dysentery, bacillary	—	—	—	—	—	—	—	4	1	3	2	—	10
Epidemic Encephalitis	—	4	9	7	8	5	—	1	3	1	1	1	40
Favus	4	—	—	—	—	—	—	—	—	—	—	—	4
German Measles	19	7	9	17	16	12	3	—	3	1	8	17	112
Glanders	—	—	—	—	—	—	—	—	—	—	—	—	0
Influenza	7,732	15,055	880	62	6	2	1	14	16	24	74	65	23,931
Leprosy	—	—	—	—	—	—	1	—	—	—	—	—	1
Malaria	—	—	—	—	2	2	5	8	3	2	—	—	22
Measles	1,425	1,165	1,313	1,010	1,207	987	224	102	66	285	390	251	8,425
Mumps	177	147	197	142	174	134	47	24	26	66	111	247	1,492
Para-Typhoid Fever	—	—	—	—	1	1	3	2	4	—	—	—	11
Pellagra	—	—	—	—	—	—	—	—	—	—	—	—	0
Pneumonia (lobar)	259	743	119	57	39	20	9	13	22	51	65	148	1,545
Poliomyelitis	2	1	2	1	—	1	2	5	3	9	10	—	41
Rabies	—	—	—	—	—	—	—	—	—	—	—	—	0
Scarlet Fever	438	365	442	407	334	245	125	104	130	279	476	683	4,028
Septic Sore Throat	4	1	2	4	—	1	—	4	—	—	1	2	19
Smallpox	2	—	—	—	—	—	—	—	—	—	—	—	2
Tetanus	1	—	—	1	—	1	2	—	2	3	2	1	13
Trachoma	1	—	—	2	3	3	—	—	—	2	—	5	16
Trichinosis	—	—	—	—	—	—	—	—	—	—	—	2	2
Tuberculosis (pulmonary)	127	98	192	195	154	171	166	145	151	164	166	176	1,905
Tuberculosis (other forms)	9	3	8	13	14	18	14	9	6	22	14	18	148
Typhoid Fever	11	6	6	15	22	15	20	63	121	62	45	40	426
Typhus Fever	—	—	—	—	—	—	—	—	—	—	—	—	0
Whooping Cough	309	255	244	210	192	253	380	488	278	282	343	415	3,649
Gonorrhoea	126	79	120	90	99	105	118	118	109	97	118	166	1,345
Syphilis	238	132	309	216	172	146	171	61	85	107	380	221	2,238

Age Incidence of Diseases Reported

A summary of the ages of persons ill with disease is contained in the following tabulation.

It is regretted that so many persons are reported, without their age being given on the card received from health officers. The table shows, however, the great number of cases of diphtheria, scarlet fever, measles, and whooping cough in children in the 0-4 and 5-9 year age groups.

It also serves to indicate the necessity of reaching in some way the 0-4 year group, the children who are not yet old enough to go to school. The parents of such children must be reached and informed of the dangers of the so-called "children's diseases."

Digitized by Google

AGE DISTRIBUTION OF CASES REPORTED IN 1920

Disease	AGE IN YEARS									
	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55 and over	Age not given
Cerebrospinal Meningitis	30	10	7	8	2	9	6	1	1	18
Chickenpox	330	505	128	34	20	12	5	1	0	431
Conjunctivitis Infectious	2	4	0	0	0	1	1	0	0	2
Diphtheria	1,080	1,140	413	203	117	148	71	28	12	542
Dysentery, bacillary	4	0	0	0	0	2	0	1	0	4
Favus	4	0	0	0	0	0	0	0	0	0
German Measles	21	29	7	5	2	3	0	0	0	45
Influenza	8	7	1	0	5	5	5	2	5	23,893
Malaria	2	2	5	0	1	4	5	0	2	1
Measles	2,289	1,106	465	157	62	65	25	7	9	4,341
Mumps	122	421	163	75	31	36	28	4	7	605
Paratyphoid Fever	1	1	1	1	2	0	0	0	2	3
Pneumonia, lobar	147	54	28	28	46	146	107	60	114	815
Poliomyelitis	18	10	2	1	1	2	0	0	0	7
Scarlet Fever	963	1,478	599	209	86	108	47	10	3	525
Septic Sore Throat	2	3	2	0	4	2	1	2	0	3
Smallpox	0	0	0	0	1	1	0	0	0	0
Tetanus	0	7	0	1	0	1	2	1	1	0
Trachoma	1	5	7	0	0	1	0	0	0	2
Tuberculosis, pulmonary	46	49	68	174	250	468	196	147	111	296
Tuberculosis, other forms	23	6	10	2	5	6	6	3	2	85
Typhoid Fever	29	35	51	49	51	94	49	13	10	45
Whooping Cough	1,551	835	82	14	15	22	8	7	3	1,112
Gonorrhoea	12	14	9	123	401	386	86	26	7	281
Syphilis	14	18	0	15	60	165	209	159	80	1,518

DISTRIBUTION OF ANTITOXIN, VACCINES AND ARSPHENAMINE, 1920

Month 1920	Diphtheria Antitoxin 1,000 unit pkg.	5,000 unit pkg.	10,000 unit pkg.	Diphtheria Schick Test (pkg.)	Toxin Antitoxin	Tetanus Antitoxin 1,500 unit pkg.	5,000 unit pkg.	Vaccine Virus (10 point pkgs.)	Arsphenamine Ampoules
Jan.	235	438	561	56	20	31	7	62	766
Feb.	204	288	303	9	21	45	13	12	345
March	86	365	443		5	66	2	19	180
April	447	407	283	42	32	52	35	105	200
May	138	114	220	45	30	100	58	99	280
June	113	216	203	7	27	192	138	39	154
July	88	198	171	0	0	158	54	39	430
August	94	118	115	7	0	191	23	202	175
Sept.	124	252	315	12	13	156	84	328	550
Oct.	254	365	510	12	66	164	57	105	410
Nov.	479	526	462	153	170	119	44	127	395
Dec.	589	356	594	13	118	95	50	39	500
Total	2,851	3,643	4,180	356	502	1,369	565	1,176	4,385

Digitized by Google

MORBIDITY, MORTALITY AND FATALITY RATES

Disease	Cases	Morbidity Rate (per 100,000)	Deaths	Mortality Rate (per 100,000)	Fatality Rate Per Cent.
Anthrax	1	0.1	1	0.1	100.0
Cerebrospinal Meningitis	91	6.5	63	4.5	69.2
Chickenpox	1,466	105.2	0	....	....
Conjunctivitis Infectious	10	0.7	0	....	....
Diphtheria	3,754	269.4	235	16.9	6.3
Dysentery, Amoebic	0	....	0	....	....
Dysentery, Bacillary	10	0.7	0	....	....
Encephalitis, Epidemic	40	2.9	40	2.9	100.0
Favus	4	0.3	0	....	....
German Measles	112	8.0	0	....	....
Glanders	0	....	0	....	....
Influenza	23,931	1717.6	1,254	90.0	5.2
Leprosy	1	0.1	0	....	....
Malaria	22	1.6	3	0.2	13.6
Measles	8,425	604.7	137	9.8	1.6
Mumps	1,492	107.1	0	....	....
Paratyphoid Fever	11	0.8	0	....	....
Pellagra	0	....	0	....	....
Plague	0	....	0	....	....
Pneumonia (Lobar)	1,545	110.9	1,014	72.8	65.6
Poliomyelitis	41	2.9	23	1.7	56.1
Rabies	0	....	0	....	....
Scarlet Fever	4,028	289.1	74	5.3	1.8
Septic Sore Throat	19	1.4	4	0.3	21.1
Smallpox	2	0.1	0	....	....
Tetanus	13	0.9	0	....	....
Trachoma	16	1.1	0	....	....
Trichinosis	2	0.1	0	....	....
Tuberculosis (Pul.)	1,905	136.7	1,441	103.4	75.6
Tuberculosis (Other forms)	148	10.6	210	15.1	....
Typhoid Fever	426	30.6	58	4.2	13.6
Whooping Cough	3,649	261.9	218	15.6	6.0
Gonorrhoea	1,345	96.5	0	....	....
Syphilis	2,238	160.6	0	....	....

Digitized by Google

Interstate Reciprocal Notification of Disease

Other State Departments of Health were notified when cases of disease apparently were infected in other states or persons in Connecticut left for other states after exposure.

A summary of these notifications is as follows:

Disease	Cases of communicable disease recognized in this State but infected outside of State	Cases (or persons exposed to cases) leaving this State for another
Diphtheria	7	3
Typhoid Fever	27	10
Typhoid Fever carriers	..	2
Tuberculosis	2	5
Scarlet Fever	4	..
Pneumonia (lobar)	1	..
Measles	6	2
Whooping cough	2	..

Co-operation with other State Departments

Several times during the year the bureau has co-operated with Mr. Thomas Holt, State Dairy and Food Commissioner, Mr. James F. Whittlesey, State Commissioner on Domestic Animals and the State Tuberculosis Commission.

The director also assisted the Milk Regulation Board and participated in the Supreme Court case of the Milk Regulation Board vs. the New Haven Dairy at the New Haven County Court House.

Publicity and Education

During the year a leaflet on scarlet fever for popular distribution was prepared and printed. The diphtheria and tuberculosis leaflets were revised.

Illustrated lectures on communicable diseases and their prevention were given before the Brooklyn Grange and a public meeting in Litchfield.

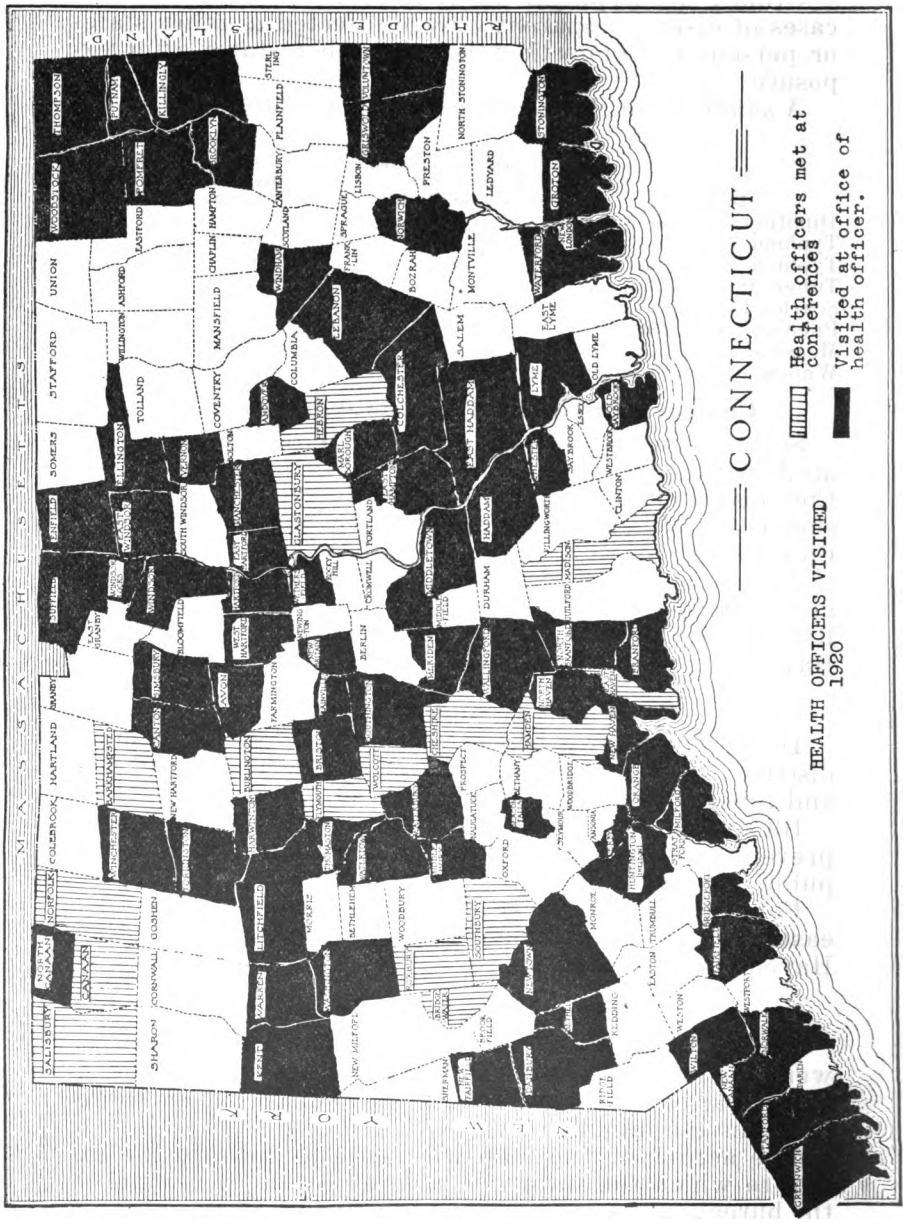
Four moving picture shows were given on venereal diseases by the epidemiologist, in Waterbury (2), New Haven and Manchester.

Investigations of Disease

During 1920, investigations of the prevalence of disease were made in the following communities. This investigation varied from conferences with health officers to detailed investigations.

The accompanying map will serve to indicate the extent to which the state was covered by the personnel of the bureau in carrying on its work during the year.

Digitized by Google



Digitized by Google

OUTBREAKS AND DISEASE INVESTIGATED BY THE STATE DEPARTMENT OF HEALTH 1920

TYPHOID FEVER:

Wilton	New London
Enfield	Brooklyn
Windsor	Rockville
East Hampton	Winsted
Hartford	Greenwich
Middletown	Stamford
Bristol	Torrington
New Fairfield	Danbury
Plainville	Wallingford
Redding	Meriden
Colchester	Canton
Mansfield	Derby
Lebanon	Orange
Milford	Danielson

Typhoid outbreaks due to milk.....6
Typhoid outbreaks due to water.....1
Typhoid outbreaks due to carrier.....3

DIPHTHERIA:

Pomfret	Andover
Putnam	Middletown
Plainville	Shelton
West Hartford	Norwich
Bloomfield	Ellington
Cheshire	Greenwich
Rockville	

SCARLET FEVER:

Simsbury	Enfield
Vernon	North Haven
Windsor (2)	New London
Greenwich	Orange
Milford	Andover
Stamford	

SUSPECTED SMALLPOX

Bristol	Mansfield
Meriden	Lyme
Avon	

POLIOMYELITIS:

Groton	Thompson
Stonington	Putnam
Killingly	

TUBERCULOSIS:

Chester	Somers (2)
Winsted	

MALARIA:

Plainfield	Greenwich
East Haddam	North Haven

Digitized by Google

MEASLES:

Putnam

MUMPS:

Wallingford

SUMMARY

Typhoid Fever	28
Diphtheria	13
Scarlet Fever	12
Smallpox (Suspected)	5
Poliomyelitis	5
Tuberculosis	4
Malaria	4
Measles	1
Mumps	1
Diarrhoea	1
Encephalitis Lethargica	1
Total Outbreaks Investigated	75

Anthrax

During the year, one case of anthrax was reported from New Britain. The infection was apparently received from a new shaving-brush which was unfortunately destroyed before it could be obtained and a bacteriological analysis made to determine whether anthrax bacilli were present in the bristles. This case was operated on and died. The lesion was on the neck.

Anthrax serum for treating human cases of anthrax was forwarded for use in this case, but the patient died before it could be administered. Arrangements were made to use the anthrax serum obtained from the Bureau of Animal Industries of the U. S. Department of Agriculture for all anthrax cases in Connecticut. A supply is kept on hand at the office of this Bureau, and forwarded by messenger, if necessary to save the life of a person ill with anthrax.

Cerebrospinal Meningitis

During the year there were 91 cases of cerebrospinal meningitis reported, twice as many as in the previous year when there were 44 cases. This increase was accompanied with a lower fatality rate, suggesting a more complete reporting of cases. The proportion of fatal cases from this disease is much too high considering that we have available the anti-meningococcus serum. It is felt that more lives could be saved if this was furnished by the State as other biological products are.

For morbidity and mortality of this disease during 1917 to 1921, see page 124.

Digitized by Google

Chickenpox

Chickenpox is customarily a mild disease resulting in few deaths, but occasionally is seen in such a severe type that there is the possibility of its being mistaken for smallpox. Particularly is this true of the disease in adults.

For these reasons, it has been suggested to health officers that adult cases of chickenpox be followed up for a few days to confirm the diagnosis. Incidentally, there have been several conferences with health officers to which the director has been called to confirm the diagnosis of chickenpox or smallpox.

The reporting of 1,466 cases of chickenpox this year exceeds all other years for this disease. The records of years previous to 1918 are so incomplete that the average incidence of this disease is unknown.

Conjunctivitis

Infectious conjunctivitis and ophthalmia neonatorum declined as compared with 1919. No severe case of ophthalmia neonatorum was brought to the attention of the bureau.

Diphtheria

There were 3,754 cases of diphtheria reported in 1920, the greatest number of cases ever reported in Connecticut. This increased incidence in diphtheria was a cause of much concern among local health officers throughout the State, and in order to combat the disease successfully educational work has been done by all manner of means such as,—

1. Conferences with health officers.
2. Distribution of pamphlets.
3. Health lectures.
4. Urging parents to call physicians early.
5. Urging physicians to administer diphtheria antitoxin at once and in sufficient doses, and in severe cases to administer it intravenously.

Diphtheria was unduly prevalent in practically all parts of the State particularly in the communities with conges-

Digitized by Google

ted population areas. It did not asssume, however, epidemic proportions sufficient to cause public alarm, for health officers have numerous means to combat this disease as,—

1. Isolating all cases.
2. Detection of diphtheria germ carriers by taking cultures of nose and throat of persons in contact with cases.
3. Immunization of all persons with diphtheria antitoxin who were in contact with a diphtheria case

With the exception of local outbreaks, the small towns in the State were remarkably free of diphtheria considering its high incidence in the larger centers of population.

The result of the work done on diphtheria was more gratifying than was expected. With 366 more cases than in 1919 there were 18 less deaths; in other words, whereas in 1919, 7.5 cases out of every 100 ill with diphtheria died, in 1920 this was reduced to 6.3, giving Connecticut the lowest fatality rate for diphtheria that has ever been recorded. It indicates clearly the value of the distribution of diphtheria antitoxin to the citizens of the State by the State Department of Health. Incidentally, this fatality rate is lower than that of any other eastern state. The mortality rate, however, is still higher than it should be and it is felt that the conscientious efforts of all health workers and officials will cause a continued reduction in the cases of this fatal disease.

See page 127 for diphtheria morbidity and mortality for 1917-1921.

DIPHTHERIA—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (Per 100.000)
Fairfield	324,989	909	279.7
Hartford	340,475	966	283.7
Litchfield	76,771	150	195.4
Middlesex	46,664	57	122.1
New Haven	419,262	1,280	305.3
New London	105,358	261	247.7
Tolland	27,273	26	95.3
Windham	53,092	105	197.8

Digitized by Google

EPIDEMIC ENCEPHALITIS

Historical

The early record of a disease which was apparently identical with the present epidemic encephalitis was reported in 1712 by Elias Camerarius who published the account of the Tubingen epidemic characterized by somnolence with pronounced brain symptoms with frequent ptosis.

Ozanann, who published a history of epidemic diseases in 1835, mentions epidemics of "catarrhal fever" with "soporosite," as having existed in Germany in 1745, in Lyon in 1800, and in Milan in 1802.

In 1768 it was apparently reported by Lepecq de la Cloture, and again by a few observers following the 1888-90 influenza epidemic and named at this time "nona".

The Present Pandemic

The present occurrence of the disease was reported by Von Economo, who mentions its presence during the winter of 1916-17 in Austria near Vienna. Since its appearance in Austria, it has been reported from all of the continents, reaching England and France early in 1918 and by the end of that year cases had been reported in the United States. In 1919 it had reached Portugal, Spain, India, Italy, and by 1920 cases were reported from all continents and most civilized countries.

In Connecticut the cases have been reported as follows:

1919

October	1
November	2
December	1
Total for year	4

1920

January	0
February	4
March	9
April	7
May	8
June	5
July	0
August	1
September	3
October	1
November	1
December	1
Total for year	40

Digitized by Google

Seasonal Distribution

The seasonal distribution of cases in Connecticut is typical of the prevalence in other countries situated in a like climate. The greatest incidence exists in the late winter and early spring months.

Etiology

There is little to say as to the exact cause of the disease. Different observers have inoculated monkeys with material taken from the upper respiratory tract of human cases and have claimed to produce the symptoms of the disease and same pathological changes that occur in human cases.

We are thus reasonably certain that the virus causing the disease exists in the nose and mouth. The disease is generally classed in the group caused by the filterable viruses. Globoid bodies similar to those found in poliomyelitis are considered by some to be the causative agent, but no proof of this is yet at hand.

Association with Influenza

Careful studies have been made to determine its relation to influenza. In a study of 181 cases in United States in 1918 and 1919, only 46 per cent. gave a history of having had influenza. Such findings as this with the presence of the disease in Austria in 1916 prior to the influenza has definitely set the disease apart from influenza.

Symptomatology

The cases in the State showed symptoms of fever, headache, malaise, ptosis, tremors, restlessness and lethargy. Half of the cases showed nausea, vomiting, disturbances of vision, difficulty in swallowing, stiff neck, delirium blurred vision and mental changes.

The lethargy lasted from about 15 days in the average case to 63 days in the longest lethargic case reported this year.

Secondary or Contact Cases

There have been to date in Connecticut no secondary cases or contact cases reported. This may be due to the existence of mild cases, lacking the prominent symptoms of the disease.

Digitized by Google

The only marked outbreak in the world was reported during 1920 in an orphan asylum in England where 12 cases occurred in a home of 21 girls. Five of these were fatal.

Summary

1. Epidemic encephalitis is apparently spread by material from the nose and throat.
2. Contact cases are rare.
3. The disease is not a type of poliomyelitis nor a complication of influenza.
4. The present status of epidemic encephalitis shows the need for more data from all cases that occur, to assist in gathering information that will assist in checking the spread of the disease.

Influenza

Influenza returned to Connecticut, as it did to the eastern part of the country, in January, when 7732 cases were reported, and reached its height in February during which month a total of 15,055 cases were reported. By May, the epidemic had entirely disappeared, but during the short space of five months, January to May inclusive, there were 23,735 cases reported and 1,186 deaths due to this disease.

The epidemic began in the southwest part of the State and spread to the eastern end of Connecticut. The disease was a much milder type than the epidemic of 1918 to 1919, and after reaching its height of incidence in February, rapidly subsided.

The symptoms were similar to the 1918 cases, but to a milder degree. The sudden onset, accompanied with backache, headache, fever, nausea and vomiting, was common. Epistaxis, intestinal involvement, prostration, extension to the lungs and general weakness were not uncommon symptoms. The duration of the disease was usually one to two weeks.

Vaccines and serums were again used as in 1920 but with doubtful benefit and their value is apparently a negligible factor.

The virulence of the organism causing the epidemic—whatever it may be—was much less than either in 1918

Digitized by Google

or 1919. The fatality rate was only 5.2 per cent compared with 7.2 in 1918 and 14.8 in 1919.

See page 129 for influenza morbidity and mortality 1918--1921.

Malaria

Certain parts of Connecticut have been known for the amount of so-called "malaria" that is present in those sections. These are certain sections along the shore and in the Connecticut, Naugatuck and other river valleys.

An attempt was made to secure better reporting of cases of malaria that the disease might be better controlled and that recommendations for drainage of bodies of standing water might be suggested to the local health officers. The results were rather surprising for but 22 cases were reported during the year, the majority being in the southwestern part of the state. These cases were reported from the following communities:

Bridgeport	1
Greenwich	9
Hamden	1
Hartford	3
Norwalk	1
Redding	1
Rocky Hill	4
Wethersfield	2

The prevalence of malaria in Connecticut depends at the present time on two factors: First, the nationality represented by the population living in an area; and second, the presence of the anopheles mosquito which is capable of carrying the malarial parasite. The mosquito cannot cause malaria unless he can obtain blood from a person who is ill with an acute or chronic case of the disease. Thus, under ordinary conditions, where there is no foreign colony there is little likelihood of malaria being found. The immigrant from a warm climate who had malaria before arriving in Connecticut may be a possible carrier of the malarial parasite. The persons particularly affected are those of southern Europe and the southern states. These persons are apt to have the malarial parasite in their blood so that the anopheles mosquito, in biting, obtains the infection and can transmit it to well persons, thereby producing new cases of malaria.

Digitized by Google

Measles

There were more cases of measles reported during the year than any year since 1916, the last epidemic year of this disease. In December, 1919, 683 cases were reported and in January, 1920, a tremendous increase occurred when 1425 cases were reported, from which time a general decrease followed. The monthly incidence is interesting and is given on page 60.

Measles outbreaks occurred in many places during 1920. Early in the year, New Haven, Hartford, Fairfield and New London counties felt the effect of this disease. Of the large cities, Hartford, New Haven, Bridgeport, New London and Stamford reported many cases in the spring. Stonington, Groton, Essex, Greenwich, and North Haven had marked outbreaks at that time.

During the summer months, measles diminished only to break out again in Windham County in October, and during the next month Putnam, Thompson, Pomfret and Woodstock had a severe epidemic.

Tolland, Litchfield and parts of Fairfield, Middlesex and Windham Counties were remarkably free of measles considering the rapid spread in other parts of the State.

It is likely that the great increase in cases during 1920 represented the normal trend of measles—that is, every four or five years, one may expect a slight epidemic of this disease, and health officers should make preparation for it, particularly in the educational line.

There has not been sufficient work in the past, or at present, attempted by health workers to combat measles; and until this is done no marked effect will be noted in lessening the ravages and complications or measles. The public should be warned of measles,—First, because more deaths follow measles than typhoid or scarlet fever in Connecticut; Second, because it is more fatal in children under five years of age than in older children; and, Third, because the complications following measles may lead to permanent disability or death.

During 1920 the deaths from measles outnumbered the deaths from typhoid or scarlet fever, 137 cases proving fatal. The fatality rate remains practically constant, being 1.7 in 1917, 1.6 in 1918, 1.7 in 1919 and 1.6 in 1920 This would perhaps demonstrate that the virulence of the

Digitized by Google

organism causing measles has remained constant for the past few years.

See page 131 for measles morbidity and mortality 1917-1921.

MEASLES—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate
Fairfield	324,989	1,156	355.7
Hartford	340,475	2,005	588.9
Litchfield	76,771	529	689.1
Middlesex	46,664	191	409.3
New Haven	419,262	2,048	488.5
New London	105,358	1,440	1,366.8
Tolland	27,273	61	223.7
Windham	53,092	995	1,874.1

Mumps

A considerable increase in this particularly annoying disease occurred over the total reported in 1919. The 1920 total, however, (1492) was practically the same as the 1918 total (1552).

Paratyphoid Fever

There were 11 cases of paratyphoid fever reported and of these cases, only 5 had the Widal test done to confirm the diagnosis. Since it is practically impossibe to diagnose paratyphoid fever from typhoid and other diseases without a Widal test, it is recommended that no cases of disease be reported as paratyphoid fever without having a Widal test or other test done to determine the organism.

Lobar Pneumonia

This disease was first made reportable in 1918 when 2,256 cases were reported, of which number 2,023 cases occurred during the last four months of the year when the influenza epidemic was present.

In 1920, 1,545 cases were reported and of this number 1,121 cases were reported during January, February and March,—the period of the influenza epidemic. Because of this complication of influenza, it is difficult to deter-

Digitized by Google

mine from the cases reported the correct monthly incidence of the disease at the present time. That it is a common factor in the disease incidence of the State can no longer be denied; nor can it be questioned that it is a communicable disease and is transmitted from one person to another and should be treated as such, with reasonable and proper quarantine and isolation measures, to protect other members of the family and the community.

Lobar pneumonia is exceedingly fatal; in fact, it is one of the most fatal diseases known, nearly half of the cases resulting in death. Excluding the first six months of the year, when it was possibly a complication of influenza, we find that from July to December inclusive there were 308 cases of lobar pneumonia reported and 268 deaths occurred during this period, giving a fatality rate of 87.0. It is realized that not all cases of lobar pneumonia are reported, but this figure, 87.0 per cent., will serve to indicate how fatal this disease is.

Poliomyelitis

Poliomyelitis, or infantile paralysis, has been reported during the year from all over the State though no indication of an outbreak occurred until the month of September when eight cases were reported from the southeastern and northeastern sections of the State. The following towns reported the number of cases given, from September to November inclusive:

September—	Groton	3
"	Hartford	1
"	Plymouth	1
"	Putnam	1
"	Bridgeport	1
"	West Hartford	1
October —	Groton	5
"	Waterbury	1
"	New Britain	1
"	Thompson	1
"	Putnam (Town)	1
November —	Putnam (City)	2
"	Waterbury	4
"	Wilton	1
"	Danbury	1
"	Shelton	1
"	Thompson	1

Digitized by Google

No source of infection was found or otherwise ascertained for the appearance of these cases. It is possible that in some way they were connected with the epidemic of the disease which occurred in eastern Massachusetts, where in Boston 161 cases occurred during the months of July to November inclusive. However, investigation of the cases failed to disclose any probable connection.

A start was made in obtaining a complete history of data from all poliomyelitis cases in the State hoping that from the material collected new and better methods could be instituted in preventing the spread of this disabling and fatal disease.

It was late in the year when the study of the cases was put into effect so information is available only on seventeen cases. Of these cases six were females and eleven males. Their nationality was: American 9, Italian 3, Irish 2, Jewish 1, Hungarian1, Polish 1.

Seven lived in the city, five in small villages and five in the country. Sanitary conveniences were such that eleven had flush toilets and six used privies.

Three of the cases were members of poor families whereas fourteen were of parents in moderate circumstances.

There were thirty-two adults and fifty-six children in the families of the cases but there were no secondary cases.

Sanitary conditions at the home were bad in one case, six were fair, and ten good.

The symptoms common to most of the cases were fever, (over 104 degrees F. in six cases) headache, constipation, vomiting, retraction of head, restlessness and drowsiness. Pain and tenderness were present in the paralyzed parts. In one or two cases muscular twitching, dizziness, sore throat, diarrhoea were noticed.

The paralysis usually followed from one to three days after the onset but in one case was sixteen days in making its appearance.

Digitized by Google

The paralyzed parts were as follows:

Both legs	3 cases
Right leg	1 case
Left	3 cases
Neck	1 case
Both arms	1 case
Left arm	1 case
Feet	1 case
Left arm and left leg	1 case
Left arm and left facial	1 case
Right facial	1 case
Right side of face, tongue, arm and leg	1 case
Distribution not stated	2 cases
Total	17 cases

Animals

All but two of the families kept animals, as horses, cows, cats, dogs, rabbits, and guinea pigs. No disease was mentioned as existing among animals except in one case where eight rabbits had died out of fifteen about a week before the onset of the case.

See page 139 for morbidity and mortality of Poliomyelitis 1917-1921.

Rabies

No cases of human rabies were reported. Due to the excellent work by the Commissioner on Domestic Animals since 1916, Connecticut is remarkably free from rabies in animals and consequently human cases are rare. In addition, the State statutes provide that where physicians find it necessary to administer the Pasteur treatment, the town shall pay for it. This statute reads as follows:

> "If any person shall have been injured by a dog or other domestic animal affected or believed to be affected by rabies, and a registered physician shall certify under oath that Pasteur treatment of such injury is necessary, the selectmen of the town, the mayor of the city or the warden of the borough in which such injury was received shall, upon receipt of the certificate of said physician, immediately provide for such treatment, and the expense thereof shall be paid by said, town, city or borough."

Digitized by Google

Through the courtesy of the State Commissioner on Domestic Animals, the Bureau is notified promptly of all cases of rabies or suspected rabies in animals. The matter is then taken up with the local health officer in the town where the dog was found in order that he may know where to obtain the Pasteur treatment, that persons bitten may be prevented from contracting this disease.

Scarlet Fever

There were more cases of scarlet fever reported during 1920 than any previous year in the State of Connecticut, 4028 cases being reported. The previous largest total was that of 3,112 cases in 1910. This year is apparently the high point in the cycle of this disease.

Scarlet fever began to run high in October, 1919, continuing through the winter, and during the summer of 1920 it ran much higher than usual. By November, 1920, the total was higher than the previous year and the high point of 683 cases was reached in December, as compared with 493 for the same month in 1919 and 187 cases for 1918.

Scarlet fever had an unusual incidence during the year in New Haven and Hartford Counties, the southern part of Fairfield County and eastern part of Litchfield County. Middlesex, Tolland and Windham Counties were practically free of scarlet fever and New London County had but few cases.

The many mild cases of scarlet fever proved to be an obstacle to health officers who were coping with the disease. These cases usually received no medical attention and in those communities where there was no system for investigating promptly the reason for a child being absent from school, the case returned to school after one or two days at home. Children absent from school one day on account of illness, no matter how slight, should not be allowed to return to school without the permission of the health officer, as prescribed in Regulation 30 of the Sanitary Code of Connecticut.

See page 141 for scarlet fever morbidity and mortality 1917-1921.

Digitized by Google

SCARLET FEVER—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (per 100,000)
Fairfield	324,989	574	176.6
Hartford	340,475	963	282.8
Litchfield	76,771	365	475.4
Middlesex	46,664	63	135.0
New Haven	419,262	1,719	410.0
New London	105,358	163	154.7
Tolland	27,273	90	330.0
Windham	53,092	91	171.4

Smallpox

Two cases of smallpox were reported during 1920. These cases occurred in Waterbury in January. No further cases followed.

See page 142 for smallpox morbidity and mortality 1917-1921.

Trichinosis

Two cases of trichinosis were reported from Waterbury in the same family, the members of which had eaten raw sausage. The diagnosis was confirmed by laboratory examination of excised tissue. Investigation by the Waterbury Department of Health showed that six other members of the family reported varying symptoms of the disease. Specimens of blood from these six, and seven other persons in the household, showed an eosinophilia varying from seven to fifty-seven per cent.

The source of the cases was apparently due to sausage made of beef and pork, the origin of which could not be ascertained.

Tetanus

The increasing use of prophylactic doses of tetanus antitoxin should dimish the cases of tetanus in the State. Although the 13 cases reported in 1920 exceed the cases reported in previous years, this is not a true increase in incidence as hitherto it is felt tetanus has been incompletely reported.

Tuberculosis

There were 1,905 cases of pulmonary tuberculosis and 148 cases of other forms of tuberculosis reported during the year.

Digitized by Google

The greatest incidence in the State was in New Haven County with New London and Hartford Counties second and third respectively. The lowest prevalence of tuberculosis was in Litchfield County.

See page 146 for morbidity and mortality from tuberculosis 1917-1921.

TUBERCULOSIS (OTHER FORMS)—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (per 100,000)
Fairfield	324,989	26	8.0
Hartford	340,475	37	10.9
Litchfield	76,771	3	3.9
Middlesex	46,664	1	2.1
New Haven	419,262	68	16.2
New London	105,358	9	8.5
Tolland	27,273	0	—
Windham	53,092	4	7.5

Digitized by Google

MORBIDITY AND MORTALITY FOR PULMONARY TUBERCULOSIS BY COUNTIES FOR THE YEAR 1920.

County	Population	Cases	Deaths	Morbidity Rate (Per 100,000)	Mortality Rate (Per 100,000)	Fatality Rate (Per cent)
New Haven County	419,262	819	398	195.3	94.9	48.6
New Haven City*	164,008	450	109	274.4	66.5	24.2
Waterbury City*	92,672	178	67	192.1	72.3	37.6
Fairfield County	324,989	345	375	106.2	115.4	
Bridgeport City*	145,674	161	126	110.5	86.5	78.3
Stamford City*	40,635	48	28	118.1	68.9	58.3
Hartford County	340,475	444	325	130.4	95.5	73.2
Hartford City*	140,051	180	102	128.5	72.8	56.7
New Britain City*	60,109	124	42	206.3	69.9	33.9
New London County	105,358	156	159	148.1	150.9	
Litchfield County	76,771	34	56	44.3	72.9	
Middlesex County	46,664	32	68	68.6	145.7	
Tolland County	27,273	17	14	62.3	51.3	82.4
Windham County	53,092	58	46	109.2	86.6	79.3
Total for State	1,393,292	1,905	1,441	136.7	103.4	75.6

*City totals included in County figures.

Digitized by Google

Typhoid Fever

There were 426 cases of typhoid fever reported in Connecticut in 1920, most of which cases were carefully investigated by the local health officers or the State Department of Health.

A typhoid epidemiological blank was prepared and used by the local health officers and the bureau for 366 cases. Careful investigation indicated the following methods by which infection occurred in 165 out of the 366 cases; 45.1 per cent. of the cases reported on, or 38.7 per cent. of the total number of cases (426) during the year.

SUMMARY OF INFECTION OF TYPHOID CASES

Source of Infection	Primary Cases	Secondary Contact Cases	Total
By typhoid carriers	5	0	5
Infected milk	68	14	82
Polluted water	8	1	9
Contact with typhoid cases ..	41	0	41
Infected outside of Conn. ..	28	0	28
Total	150	15	165

The second column gives the number of cases in milk and water outbreaks that were apparently not caused by the infected milk or water, but were infected by one of the original cases in an outbreak. These secondary cases are persons who, in most instances, could have been immunized against typhoid fever by taking triple typhoid vaccine and their illness prevented.

The morbidity and mortality rates for typhoid were slightly higher than in 1919, in part due to the change in estimating the population of the State and in part due to the increase in cases and deaths. The fatality rate of 13.6 was practicallly the same as the 13.5 per cent. in 1919.

The detailed investigations carried on by the local health officers undoubtedly played a large part in lowering the endemic typhoid fever in Connecticut, for if we exclude from the total of 426 cases the 165 epidemic cases, it leaves the small total of 261 endemic cases for the year, compared with the 354 endemic cases for the year 1919.

Although the cases of typhoid fever during the year showed an increase over the previous year, the increase in cases was largely due to an unfortunate number of outbreaks which no health officer could foresee. The cases of endemic typhoid in the State—or cases aside from those

Digitized by Google

occurring in outbreaks—is rapidly diminishing, as is shown by the accompanying table.

COMPARISON OF ENDEMIC TYPHOID 1918-1920

	1918	1919	1920
Endemic cases	399	354	261
Cases in Outbreaks	44	61	165
Typhoid cases	443	415	426

The sources of infection as determined by investigation is given in detail in the accompanying tables.

Typhoid Cases Due to Milk

There were five distinct typhoid fever outbreaks apparently due to infected milk. These were in Enfield, Danbury, Wallingford and Meriden, Hartford, and Hartford and Windsor, totaling 82 cases in all.

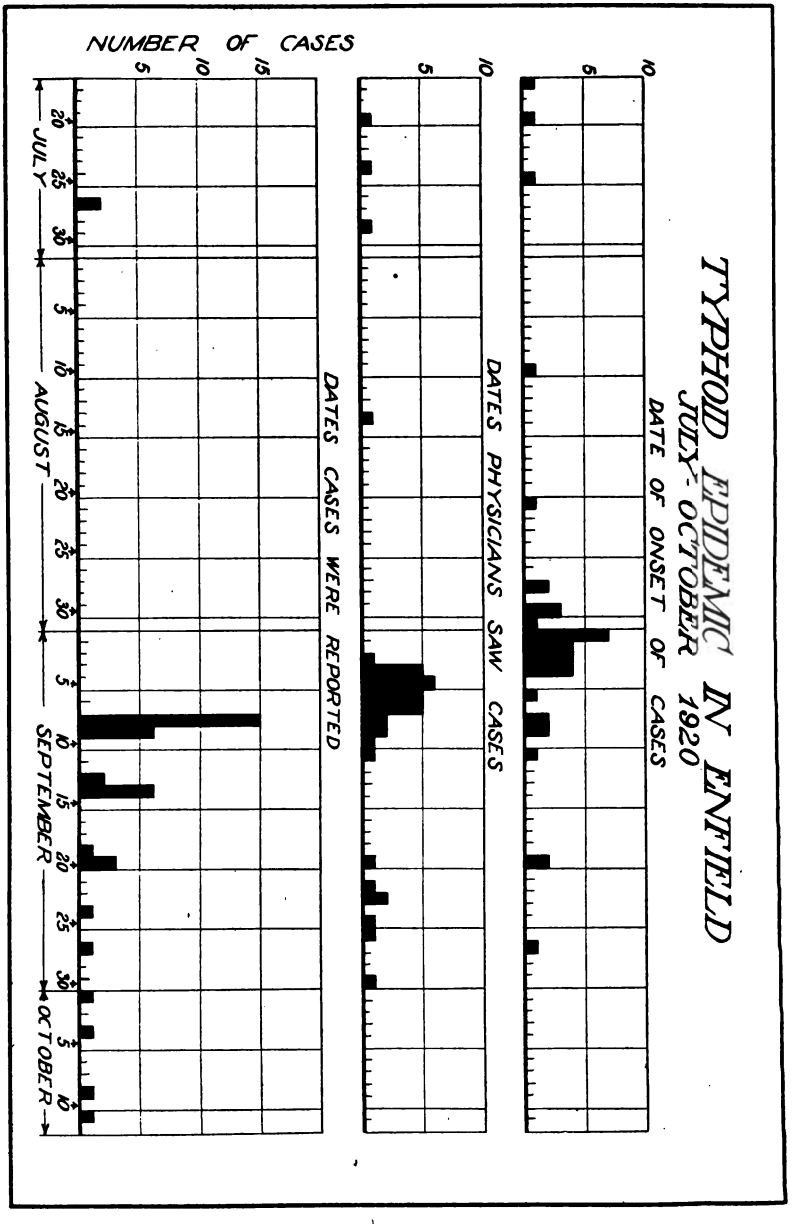
Enfield Epidemic

The largest epidemic with 36 cases was in Thompsonville in the town of Enfield. During July and August there were four typhoid cases in Thompsonville, two of which were not reported to the local health officer or the State Department of Health. The origin of these four cases is unknown, but the fourth case was a contact and infected apparently by one of the previous three cases. The fifth case was a milk handler at the P. C. Dairy who became infected from one of these early cases and worked while in the early stages of typhoid fever, during which time he apparently infected the milk. The outbreak which followed was the result of this series of cases.

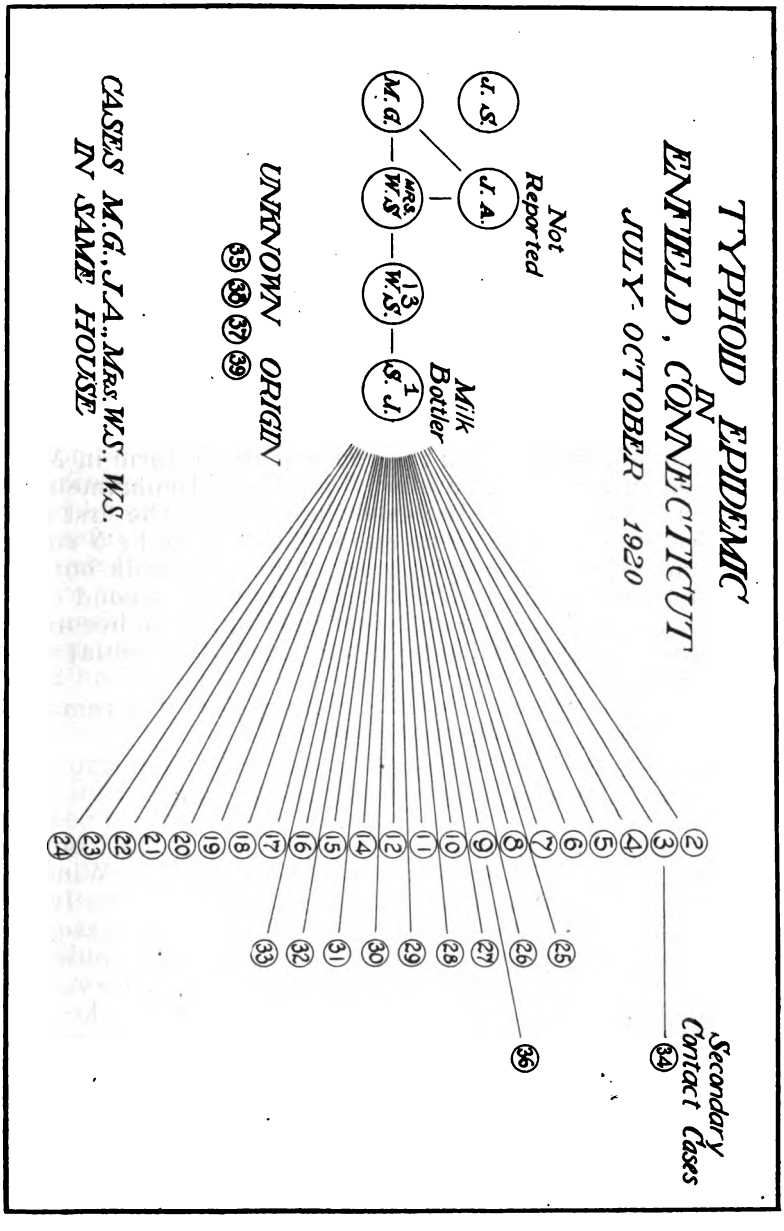
In addition to the primary case and 30 who apparently became ill from drinking the milk, there were 5 secondary cases in households where cases occurred previously, making a total of 36 cases in the epidemic. In addition to these cases actually traced, there were five other cases who became ill with typhoid fever during the epidemic in the first two weeks in October, the occurrence of which, would strongly suggest that they obtained their infection from contact with typhoid cases in the incubation period of the disease and were connected with the epidemic.

On September 8th the Department received its first information that there were 15 cases of typhoid fever in Enfield. Careful investigation in co-operation with the lo-

Digitized by Google



Digitized by Google


TYPHOID EPIDEMIC
IN
ENFIELD, CONNECTICUT
JULY-OCTOBER 1920
Not Reported
J. S.
J. A.
Milk Bottler
M. G.
MRS. W. S.
W. S. 13
SG. J. 1
UNKNOWN ORIGIN
35 36 37 39
CASES M.G., J.A., MRS. W.S., W.S. IN SAME HOUSE
Secondary Contact Cases
34

cal health officer and the State Dairy and Food Commission excluded the three farms producing milk for the dairy as a possibility in the causation of the epidemic and definitely located the milk handler who was ill, and had continued to work up to and including September 5th. Later he gave a definite history of being ill since August 21st.

Examination of blood, feces and urine were made of the persons who handled milk on the S., P., Z., and W. farms, which supplied the P. C. milk route. These examinations were all negative. No record was obtained of anyone on the farms having had typhoid previously.

Meriden and Wallingford Outbreak

Four cases of typhoid in the Yalesville section of Meriden and Wallingford, on the route of the Y farm in May, resulted in an investigation by the State Department of Health. This search disclosed the fact that the first case worked on one of the farms supplying milk to the Y route, and had assisted in washing and filling the milk bottles. This patient was ill for 18 days prior to the second case, and had visited Canton and Torrington prior to becoming ill. Investigation failed to show where this initial case received the infection.

No cases followed after the primary case was removed to the hospital for treatment.

Hartford and Windsor Epidemic

In September, an outbreak of 25 cases occurred on the route of a Windsor milkman supplying milk in Windsor and Hartford. Of these cases 18 were apparently infected by drinking infected milk, and 7 were cases infected by contact with previous cases in the epidemic. Of these cases, 17 were in Hartford, 6 in Windsor, 1 in New Haven and 1 in Holyoke, Mass. The Holyoke case was infected apparently while staying in Hartford and the New Haven case while staying in Windsor both having used milk from the P. farm.

The State Department of Health co-operated with the local health officers of Windsor and Hartford in attempting to locate the original source of infection. Many specimens of blood and urine were taken from the six members of the P. Farm but without definite findings. It was

Digitized by Google

found that a case, S. D., who took milk from the P. route had typhoid July 18th and that the first cases in the epidemic group began August 16th and continued without interruption until September 4th.

The conditions at the P. Farm were far from satisfactory, and the sale of milk was stopped by the Hartford Board of Health except when pasteurized, and later was stopped entirely.

Recommendations were made by the Hartford and Windsor Boards of Health, State Dairy and Food Commissioner and this Bureau, and after several weeks milk was again permitted to be sold.

Danbury Outbreak

In Danbury 9 cases of typhoid occurred in April in connection with the M. milk route. Seven of the cases were apparently infected by milk whereas two others were infected by contact with previous cases.

Careful examinations were made of the blood, feces and urine of men working on the two farms supplying milk to the M. Dairy, with no definite results. One of the men assisting in milking cows had typhoid in 1896 and was suspected of being a typhoid bacilli carrier, but typhoid bacilli were not isolated from his feces or urine.

Hartford Outbreak

An outbreak of 8 cases occurred on the route of the P. Dairy in Hartford during September and were apparently infected by the milk.

Investigation by the Hartford Board of Health showed that the cases were confined to the route covered by a single driver for the P. Dairy and laboratory examinations by the laboratory of the Hartford Board of Health showed him to be a "carrier" of typhoid germs. The milk was pasteurized prior to delivery.

East Hampton Epidemic

An outbreak of 13 cases of typhoid fever occurred among persons who had visited at Camp W. in East Hampton during July, August and September. In addition a secondary contact case occurred in the home of one of the primary cases, making a total of 14 cases.

The camp had a population of about 550 people during the season and half of the patients were taken ill after they had returned home. Through the method of inter-

Digitized by Google

state reciprocation of morbidity reports, New York State, New Jersey and Connecticut exchanged information in regard to the outbreak and it was found that four cases in New York City, two in New Jersey, and one from Long Island were apparently infected while staying at Camp W. In Connecticut, four of the cases were reported from Norwalk and three from Middletown, the Norwalk cases having been taken ill after they returned from their vacation, whereas the Middletown cases were persons who had been removed from the camp to Middletown, for hospital treatment.

Careful investigation by the State Department of Health in co-operation with the local health officer and camp authorities finally eliminated all possible sources of infection except the brook water, piped to the camp for washing purposes. The brook showed gas formation in 1.0 c. c. sample. A driven well and spring on the grounds each showed gas formation in 10.0 c. c.

The first case of typhoid in the camp was H. G., who was taken ill with typhoid the day after his arrival and is not counted as a case in the outbreak as the next case occurred August 1st and no connection could be established between the two cases.

Three of the cases were employees at the camp, the remaining 11 cases being guests.

Food Borne Typhoid

One case of typhoid fever in Danielson was a patient who had been visiting at a hotel at Quonochontaug Beach, R. I., where an outbreak of typhoid fever occurred due to food infected by a waiter. Information from the Rhode Island Board of Health stated that this waiter was found to have a mild case of typhoid and handled food for several days while ill with the disease.

Digitized by Google

Cases Due to Typhoid Carriers

Date	Locality	Cases	Remarks
March	Redding	1	Patient was the fourth case in family since 1907. Typhoid bacilli were isolated from feces and urine of father. Carrier had typhoid in 1907.
October November December	Mansfield	4	Four cases occurred in October, November and December in the Mansfield State Training School. Careful investigation by the institution authorities assisted by the State Department of Health disclosed five typhoid carriers. These carriers were promptly isolated and no further typhoid cases appeared at this institution. The carriers denied ever having typhoid fever.
September	Hartford	8	Classed as a milk outbreak in this report. A driver on P. Dairy was found to be a carrier. All the cases were on the route where he delivered milk.

Cases Infected Outside the State

Of the twenty-eight cases of typhoid fever infected without Connecticut, two were brought to hospitals in the state for treatment, and one was one of the cases in a food epidemic at Quonochontaug Beach, R. I.

Age and Sex

The age and sex are available for 362 of the cases. There was a slightly higher incidence among males than females, and the greatest number of cases was in the 25-29 year age period.

AGES (YEARS)

	Under 1	1	2	3	4	5	6	7	8	9	10-14	15-19	20-24	25-29	30-34	35-39	40-49	50-59	60 & over	Totals
Male	1	4	4	7	2	3	3	4	4		27	25	26	32	14	11	14	7	3	191
Female	1	2	5	3	1	2	6	7			27	21	24	30	13	13	9	5	2	171
	2	6	9	10	3	5	9	11	4		54	46	50	62	27	24	23	12	5	362

Occupation of Cases

The occupations of typhoid cases is often helpful in determining the cause of an outbreak, for at times the character of an industry is such that it is capable of

Digitized by Google

spreading the disease through independent water supplies that are in use.

However, in 1920 no factory was found as a source of typhoid outbreaks.

Occupation of Cases

Occupation	Cases
School Children	79
Shop hands	70
Housekeepers	54
Clerks	34
Laborers	25
Servants	11
Nurses	5
Carpenters	3
Electricians	3
Farmers	3
Merchants	3
Railroad men	2
Cooks	2
Firemen	2
Inspectors	2
Mechanics	2
Teachers	2
Blacksmiths	1
Caddies	1
Chauffeurs	1
Masons	1
Milliners	1
Milkmen	1
Printers	1
Total	310 Cases

Sanitation of Homes

The care of the home, particularly the personal habits of the people, usually determines whether typhoid fever will spread to the other members of the household or not. If people are not careful about their habits, typhoid fever and other intestinal diseases are sure to spread through the home. When a typhoid case occurs, all other persons living in the household or in contact with them should be immunized at once with the typhoid-paratyphoid "triple" vaccine.

In addition, the screening of houses to keep flies outside is very important, particularly during the warm months. It is absolutely necessary to have a fly-tight home if typhoid fever cases are treated in the home. This is to prevent flies from walking over infected material in the sick room and then going elsewhere, carrying the typhoid germs with them.

Digitized by Google

A study of the 366 cases on which information is available shows that only 199 of the cases had screens on the windows of the sick room and many of these were in such a condition that they were useless in preventing flies from entering and leaving the room.

Hospitalization of Cases

It is now recognized that the best place for a typhoid patient is in a hospital unless hospital conditions in regard to the care and treatment of the case, the disposal of the body excreta of the patient and the prevention of the spread of disease can be carried out in the home, as would be done in a hospital.

Ninety-nine of the cases were sent to hospitals for treatment and it is interesting to note that of the contact cases only two occurred in homes where the patients had been removed to a hospital.

Outbreaks Due to Contact Cases

The following communities had two cases in the same household, the second case in each instance apparently being infected by the earlier case. This latter case could have probably been prevented if anti-typhoid inoculation had been given to the other members of the household when the initial case was diagnosed. These communities are:

January	Norwich	2 cases in same household
March	Preston	3 cases in same household
April	Danbury	4 cases divided in 2 households
May	New Hartford	2 cases in same household
September	Hartford	2 cases in same household
September	Hartford	2 cases in same household
September	New Britain	2 cases in same household
September	Newington	2 cases in same household
October	Hartford	2 cases in same household
Oct.—Nov.	New Haven	Four houses with 2 cases each
November	Orange	1 contact case with New Haven man

In Norwich during November and December four cases of typhoid occurred in the same household. The source of the primary case was not located and the other members of the household did not take the typhoid inoculation.

In New Haven two outbreaks, apparently of separate origin, began in October. One series included 11 cases, 6 of which were in the same household. In this series two other households had two cases each. The second series

Digitized by Google

of cases consisted of 10 cases, 6 of which were in the same household. Two other households had 2 cases each.

No members of the households were given typhoid vaccine to protect them against the disease in either of these outbreaks, for they would not permit vaccine to be administered.

See page 149 for morbidity and mortality for 1917-1921

TYPHOID FEVER—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (per 100,000)
Fairfield	324,989	61	18.8
Hartford	340,475	154	45.2
Litchfield	76,771	15	19.5
Middlesex	46,664	21	45.0
New Haven	419,262	115	27.4
New London	105,358	38	36.1
Tolland	27,273	6	22.0
Windham	53,092	16	30.1

Whooping Cough

The reporting of disease has been more complete each year for the past few years. This is reflected in the 3,649 cases of whooping cough reported during 1920.

Early in the year, whooping cough was reported from many parts of Hartford and New Haven Counties. By August, Fairfield and Middlesex Counties reported many cases and in November and December it was prevalent in the coast section of New London County. Windham, Tolland, Litchfield and the northern part of Hartford County reported but few cases and were apparently rather free of this disease.

Whooping cough caused more deaths in Connecticut during 1920 than any other of the acute diseases except diphtheria. There were 3,649 cases and 217 deaths. Diphtheria alone exceeded this with 3,754 cases and 235 deaths.

Whooping cough is looked upon by the public much the same as is measles, and until by educational methods

Digitized by Google

the public is informed and impressed with its seriousness, the disease will take its yearly toll.

See page 177 for morbidity and mortality from whooping cough 1917-1921.

WHOOPING COUGH—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (per 100,000)
Fairfield	324,989	792	243.7
Hartford	340,475	548	161.0
Litchfield	76,771	189	246.2
Middlesex	46,664	362	775.8
New Haven	419,262	1,292	308.2
New London	105,358	359	340.7
Tolland	27,273	9	33.0
Windham	53,092	98	184.6

Digitized by Google

CASES AND DEATHS FROM

1920 New Haven County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Ansonia	2	—	191	1	21	2	40	8	25	5	775	19	29	—
Beacon Falls	—	—	29	—	19	—	8	—	3	—	42	—	—	—
Bethany	—	—	7	—	—	—	6	—	—	—	—	—	—	—
Branford	1	—	13	—	19	—	2	—	42	—	145	4	2	—
Cheshire	—	—	7	—	9	—	45	—	49	1	87	—	—	—
Derby (city)	3	1	17	4	37	2	7	6	30	1	507	26	11	—
East Haven	1	1	67	—	12	—	1	—	5	2	10	1	4	—
Guilford	—	—	5	—	2	—	22	—	—	—	201	4	2	—
Hamden	1	—	116	3	34	—	117	2	38	—	260	7	15	—
Madison	1	—	—	—	—	—	74	—	—	—	24	—	5	—
Meriden	7	—	101	1	210	2	32	7	105	7	914	47	7	—
Middlebury	—	—	26	—	3	—	—	—	7	—	9	1	—	—
Milford	2	1	75	—	73	2	22	1	7	—	33	4	13	—
Naugatuck	3	—	21	1	45	1	5	2	18	1	52	13	18	—
New Haven (city)	67	11	945	34	557	7	533	30	499	19	1,051	183	118	—
North Branford	—	—	—	—	—	—	—	—	1	—	—	—	—	—
North Haven	—	—	103	1	9	—	33	—	18	1	7	4	18	—
Orange	7	1	88	1	39	—	39	4	46	3	108	9	8	—
Oxford	—	—	5	—	2	—	2	—	—	—	—	1	—	—
Prospect	—	—	5	—	—	—	—	—	1	—	—	—	—	—
Seymour	—	—	2	2	15	—	13	3	22	1	90	4	12	—
Southbury	—	—	9	—	5	—	—	—	6	—	—	—	—	—
Wallingford	5	—	45	1	48	—	11	2	96	5	4	7	18	—
Waterbury	15	—	142	4	556	18	280	26	262	18	2,523	107	32	—
Wolcott	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Woodbridge	—	—	29	—	4	—	—	—	—	—	—	1	—	—
Total	115	15	2,048	53	1,719	34	1,292	91	1,280	64	6,842	442	312	—

1920 Middlesex County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Chester	—	—	—	—	—	—	36	—	2	—	99	2	—	—
Clinton	—	—	3	—	2	—	3	—	1	—	6	—	16	—
Cromwell	—	—	1	—	16	1	5	1	7	—	60	4	4	—
Durham	—	—	—	—	—	—	9	—	—	—	6	—	1	—
East Hampton	3	—	9	—	4	—	16	—	5	2	34	3	26	—
East Haddam	—	—	—	—	1	—	16	—	5	1	32	3	13	—
Essex	1	1	130	1	5	1	7	—	4	—	40	1	4	—
Haddam	1	—	1	—	—	—	—	—	2	—	13	6	—	—
Killingworth	—	—	1	—	—	—	—	—	1	—	—	—	2	—
Middlefield	—	—	—	—	1	—	—	—	—	—	—	1	1	—
Middletown	12	2	34	—	23	—	208	3	17	4	241	19	32	—
Old Saybrook	—	—	3	—	3	—	2	—	2	—	2	—	3	—
Portland	1	—	4	—	7	—	46	—	3	1	25	—	2	—
Saybrook	1	—	5	—	1	—	13	—	6	—	20	1	17	—
Westbrook	2	—	—	—	—	—	1	—	2	—	3	—	—	—
Total	21	3	191	1	63	2	362	4	57	8	581	40	121	—

C.—Cases D.—Deaths

Digitized by Google

REPORTABLE DISEASES, 1920

German Measles (19-B) C.	German Measles (19-B) D.	Mumps (19-C) C.	Mumps (19-C) D.	Tuberculosis (pulmonary) (28-29) C.	Tuberculosis (pulmonary) (28-29) D.	Tuberculosis (other forms) (30-35) C.	Tuberculosis (other forms) (30-35) D.	Syphilis (37) C.	Syphilis (37) D.	Conjunctivitis Infectious (38-A) C.	Conjunctivitis Infectious (38-A) D.	Gonorrhoea (38-C) C.	Gonorrhoea (38-C) D.	Cerebrospinal Meningitis (61-C) C.	Cerebrospinal Meningitis (61-C) D.	Pneumonia (lobar) (92-1) C.	Pneumonia (lobar) (92-1) D.	Septic Sore Throat (100) C.	Septic Sore Throat (100) D.
—	—	1	—	23	14	2	2	19	—	1	—	22	—	1	1	28	6	5	—
—	—	—	—	1	2	—	—	2	1	—	—	2	—	—	—	4	—	—	—
—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
—	—	5	—	12	8	—	—	7	—	—	—	4	—	1	—	5	7	—	—
—	—	1	—	1	2	—	—	16	1	—	—	3	—	1	—	1	2	—	—
—	—	1	—	6	8	—	—	13	—	—	—	2	1	—	1	18	8	—	—
—	—	1	—	7	1	—	—	1	—	—	—	—	—	—	—	2	1	—	—
—	—	5	—	2	—	1	—	—	—	—	—	2	—	—	—	1	—	—	—
1	—	11	—	5	2	—	—	1	—	—	—	4	—	—	—	9	9	1	—
—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	1	—	—	—
6	—	15	—	58	67	2	9	61	—	—	—	58	—	2	1	39	22	—	—
—	—	4	—	1	1	—	—	1	—	—	—	1	—	—	—	—	—	—	—
1	—	25	—	9	9	—	—	5	—	—	—	3	—	—	—	5	6	—	—
3	—	—	—	7	12	—	3	10	—	—	—	3	—	1	—	21	10	—	—
5	—	100	—	450	109	42	34	545	18	1	—	204	1	16	11	2	167	1	1
—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—
3	—	6	—	7	1	—	—	—	—	—	—	1	—	—	—	8	2	—	—
6	—	—	—	20	81	1	4	21	—	—	—	12	—	—	—	11	9	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	16	2	—	1	3	1	—	—	1	—	1	1	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	34	—	14	10	—	1	7	—	—	—	5	—	2	1	7	13	—	—
7	—	33	—	178	67	20	16	149	6	—	—	142	—	11	9	220	71	—	1
—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	15	—	1	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—
32	—	260	—	819	398	68	70	864	27	2	—	470	2	36	25	383	333	7	2

German Measles (19-B) C.	German Measles (19-B) D.	Mumps (19-C) C.	Mumps (19-C) D.	Tuberculosis (pulmonary) (28-29) C.	Tuberculosis (pulmonary) (28-29) D.	Tuberculosis (other forms) (30-35) C.	Tuberculosis (other forms) (30-35) D.	Syphilis (37) C.	Syphilis (37) D.	Conjunctivitis Infectious (38-A) C.	Conjunctivitis Infectious (38-A) D.	Gonorrhoea (38-C) C.	Gonorrhoea (38-C) D.	Cerebrospinal Meningitis (61-C) C.	Cerebrospinal Meningitis (61-C) D.	Pneumonia (lobar) (92-1) C.	Pneumonia (lobar) (92-1) D.	Septic Sore Throat (100) C.	Septic Sore Throat (100) D.
—	—	—	—	—	—	—	—	1	—	—	—	3	—	—	—	1	—	—	—
—	—	1	—	2	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—
—	—	5	—	2	1	—	—	1	—	—	—	—	—	—	—	4	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	3	—	1	—	—	—	—	—	—	—	—	—	—	—	4	1	—	—
—	—	1	—	1	1	—	—	—	—	—	—	—	—	—	—	2	1	—	—
2	—	5	—	2	3	1	—	1	—	—	—	—	—	—	—	6	2	—	—
3	—	2	—	2	—	—	—	—	—	—	—	—	—	—	—	2	2	—	—
—	—	—	—	1	2	—	—	—	—	—	—	—	—	—	—	1	1	—	—
—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	349	1	11	57	—	2	17	1	—	—	14	—	—	1	7	29	—	—
—	—	—	—	2	1	—	—	—	—	—	—	—	—	—	—	3	—	—	—
—	—	2	—	3	3	—	—	5	—	—	—	4	—	—	—	1	—	—	—
—	—	1	—	4	—	—	—	—	—	—	—	1	—	—	—	4	2	—	—
—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—
6	—	372	1	32	68	1	2	25	1	—	—	22	—	—	1	37	41	—	—

C.—Cases D.—Deaths

Digitized by Google

CASES AND DEATHS FROM

1920 Litchfield County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Barkhamsted	1	—	12	—	1	—	2	1	2	—	16	—	1	—
Bethlehem	—	—	1	—	—	—	2	—	—	—	15	—	—	—
Bridgewater	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Canaan	—	—	—	—	4	—	—	—	—	—	22	—	—	—
Colebrook	—	—	—	—	4	—	—	—	—	—	5	—	—	—
Cornwall	—	—	1	—	—	—	8	—	—	—	21	—	—	—
Goshen	—	—	2	—	1	—	5	—	—	—	42	1	—	—
Harwinton	—	—	57	3	8	—	3	—	1	—	11	4	2	—
Kent	—	—	1	—	2	—	20	—	1	—	6	—	—	—
Litchfield	—	—	78	1	5	—	—	—	27	1	14	—	8	1
Morris	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New Hartford	5	—	3	—	1	—	1	—	—	—	115	4	—	—
New Milford	1	1	17	—	5	—	—	—	—	—	49	2	2	—
Norfolk	—	—	24	—	—	—	1	—	—	—	19	—	—	—
North Canaan	1	—	24	—	5	—	6	1	1	—	87	—	1	—
Plymouth	1	—	3	—	46	1	3	1	85	2	45	5	2	—
Roxbury	—	—	16	—	1	—	12	—	—	—	12	—	—	—
Salisbury	—	—	18	—	—	—	7	1	7	1	21	2	1	—
Sharon	1	—	6	—	1	—	4	—	6	—	17	3	—	—
Thomaston	2	—	20	—	18	—	—	—	6	—	247	3	1	—
Torrington	1	—	2	5	179	4	—	5	21	3	592	25	—	—
Warren	—	—	—	—	1	—	—	—	—	—	8	—	—	—
Washington	1	—	—	—	1	—	3	—	2	—	31	2	—	—
Watertown	—	—	54	—	21	—	85	1	36	3	812	4	6	—
Winchester	1	—	181	1	61	—	27	—	5	—	37	4	5	—
Woodbury	—	—	13	—	—	—	—	—	—	—	65	—	—	—
Total	15	1	529	10	365	5	189	10	150	10	2,309	59	24	1

1920 Windham County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Ashford	—	—	28	—	—	—	—	—	—	—	45	—	—	—
Brooklyn	—	—	51	2	—	—	1	—	—	—	101	2	—	—
Canterbury	—	—	5	—	—	—	—	—	2	—	—	—	2	—
Chaplin	—	—	—	—	—	—	—	—	—	—	8	1	2	—
Eastford	—	—	3	—	—	—	—	—	—	—	2	—	—	—
Hampton	—	—	—	—	2	—	41	—	—	—	13	—	—	—
Killingly	4	—	150	1	6	—	1	1	4	—	107	2	—	—
Plainfield	6	—	28	2	6	—	7	1	25	—	200	6	3	—
Pomfret	—	—	51	—	—	—	6	—	8	—	11	2	1	—
Putnam	3	1	515	7	4	—	5	1	2	—	1,082	7	18	—
Scotland	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sterling	—	—	51	—	7	—	—	—	3	—	6	—	—	—
Thompson	1	—	54	1	12	—	3	—	16	1	25	4	5	—
Windham	1	—	19	1	53	2	19	—	45	2	150	8	10	—
Woodstock	1	—	40	—	1	—	12	1	—	—	16	1	15	—
Total	16	1	995	14	91	2	98	4	105	3	1,788	33	56	—

C.—Cases D.—Deaths

Digitized by Google

REPORTABLE DISEASES, 1920

German Measles (19-B)		Mumps (19-C)		Tuberculosis (pulmonary) (28-29)		Tuberculosis (other forms) (30-35)		Syphilis (37)		Conjunctivitis Infectious (38-A)		Gonorrhoea (38-C)		Cerebrospinal Meningitis (61-C)		Pneumonia (lobar) (92-1)		Septic Sore Throat (100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	1	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	2	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—
—	—	—	—	2	3	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—
—	—	2	—	3	1	—	—	3	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
1	—	—	—	3	1	—	—	1	—	—	—	6	—	—	—	1	—	—	—
—	—	17	—	2	8	1	—	—	—	—	—	—	—	—	—	1	4	1	—
—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	3	4	1	—	1	—	—	—	5	—	—	—	1	2	—	—
1	—	—	—	8	5	—	—	4	—	—	—	—	—	—	—	2	1	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
—	—	—	—	1	3	—	—	—	—	—	—	—	—	—	—	1	2	—	—
—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—
—	—	—	—	2	5	—	—	2	—	—	—	3	—	—	—	—	—	—	—
—	—	—	—	1	15	1	3	10	—	—	—	7	—	—	—	12	12	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	3	—	6	3	—	2	2	—	—	—	3	—	—	—	17	6	—	—
—	—	—	—	—	4	—	1	2	—	—	—	9	—	—	—	—	4	—	—
—	—	1	—	1	2	—	—	—	—	—	—	—	—	—	—	—	3	—	—
7	—	29	—	34	56	3	6	27	—	—	—	35	1	—	—	39	39	1	—

German Measles (19-B)		Mumps (19-C)		Tuberculosis (pulmonary) (28-29)		Tuberculosis (other forms) (30-35)		Syphilis (37)		Conjunctivitis Infectious (38-A)		Gonorrhoea (38-C)		Cerebrospinal Meningitis (61-C)		Pneumonia (lobar) (92-1)		Septic Sore Throat (100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	8	—	5	3	—	1	3	—	—	—	—	—	—	1	6	2	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
—	—	1	—	3	1	—	—	2	3	—	—	—	—	—	1	—	—	—	—
1	—	10	—	10	3	—	1	4	2	—	—	2	—	2	1	13	1	—	—
1	—	2	—	13	16	1	1	—	—	—	—	5	—	—	—	—	3	—	—
—	—	2	—	—	2	1	—	1	—	—	—	—	—	—	—	—	1	—	—
—	—	3	—	6	7	—	—	—	—	—	—	7	—	—	—	40	4	—	—
—	—	—	—	—	1	—	—	2	—	—	—	—	—	—	—	1	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	—	—	—
—	—	—	—	5	2	—	—	—	—	—	—	1	—	—	—	4	7	—	—
—	—	—	—	14	9	2	4	18	—	—	—	13	—	—	—	6	9	—	—
—	—	—	—	1	1	—	—	1	—	—	—	2	—	—	—	4	—	—	—
4	—	26	—	58	46	4	7	31	5	—	—	31	—	2	4	75	29	—	—

C.—Cases D.—Deaths

Digitized by Google

CASES AND DEATHS FROM

1920 Hartford County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Avon	—	—	2	—	—	—	—	—	1	—	21	—	8	—
Berlin	1	—	152	—	15	—	2	—	18	2	174	6	4	—
Bloomfield	—	—	8	—	4	—	1	1	4	—	6	—	—	—
Bristol	7	1	80	1	43	1	58	7	85	1	394	9	27	—
Burlington	—	—	18	—	—	—	6	1	—	—	8	1	—	—
Canton	1	—	6	—	18	—	4	—	—	—	209	9	—	—
East Granby	2	—	3	—	—	—	1	—	—	—	13	2	—	—
East Hartford	3	1	29	1	19	—	2	1	8	2	19	4	—	—
East Windsor	—	—	3	—	26	—	1	—	—	—	52	4	—	—
Enfield	44	4	173	6	7	—	—	—	22	1	167	13	1	—
Farmington	2	—	68	1	10	—	7	—	4	—	322	3	21	—
Glastonbury	1	1	10	—	8	—	—	—	2	—	85	1	—	—
Granby	—	—	—	—	—	—	—	—	3	—	27	1	1	—
Hartford	54	11	628	7	349	4	249	12	460	28	1,440	125	181	—
Hartland	—	—	11	—	—	—	1	1	—	—	—	—	—	—
Manchester	—	1	42	—	35	—	22	—	16	—	488	10	46	—
Marlborough	[illegible]						—	—	7	—	1	—	—	—
New Britain	22	1	224	3	266	14	133	9	227	18	1,655	62	44	—
Newington	5	—	3	1	[illegible]		—	1	5	—	—	3	1	—
Plainville	3	—	142	2	19	—	3	—	5	3	66	3	1	—
Rocky Hill	—	—	7	—	—	—	2	—	[illegible]		[illegible]		1	—
Simsbury	—	—	1				—	—	11	—	31	2	—	—
Southington	—	—	1				19	2	27	2	41	7	1	—
South Windsor	—	—	3	—	3	—	1	—						
Suffield	—	—	3	1	13	—	—	—	[illegible]	1	[illegible]			
West Hartford	2	—	34	—	15	—	26	4	16	—	87	7	12	—
Wethersfield	1	1	4	—	9	—	10	2	16	—	14	1	5	—
Windsor	7	1	4	—	26	1	—	—	5	—	1	4	—	—
Windsor Locks	1						—	—	10	—	176	5	—	—
Total	154	22	2,005	24	963	22	548	41	966	58	5,703	287	354	—

1920 Tolland County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Andover	—	—	—	—	3	—	—	—	—	—	—	—	—	—
Bolton	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Columbia	—	—	1	—	1	—	—	—	—	—	4	—	—	—
Coventry	—	—	3	—	14	—	—	—	1	—	—	1	—	—
Ellington	2	—	—	—	4	—	—	—	8	—	—	2	—	—
Hebron	—	—	19	—	—	—	1	—	—	—	27	1	—	—
Mansfield	4	2	8	—	2	—	8	—	1	—	97	3	40	—
Somers	—	—	20	1	1	—	—	—	1	—	8	—	—	—
Stafford	—	1	2	—	6	—	—	—	3	—	—	2	—	—
Tolland	—	—	—	—	13	—	—	—	—	—	4	—	2	—
Union	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Vernon	—	—	7	1	25	—	—	—	12	2	66	—	6	—
Willington	—	—	1	—	21	—	—	—	—	—	8	1	—	—
Total	6	3	61	2	90	—	9	—	26	2	214	11	49	—

C.—Cases D.—Deaths

Digitized by Google

REPORTABLE DISEASES, 1920

Measles		Mumps		Tuberculosis (pulmonary)		Tuberculosis (other forms)		Syphilis		Conjunctivitis Infectious		Gonorrhoea		Cerebrospinal Meningitis		Pneumonia (lobar)		Septic Sore Throat	
(19-B)		(19-C)		(28-29)		(30-35)		(37)		(38-A)		(38-C)		(61-C)		(92-1)		(100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	7	8	—	—	2	—	—	—	—	—	1	—	—	—	—	—
—	—	—	—	1	1	—	—	1	—	—	—	8	—	—	—	1	—	—	—
—	—	16	—	50	12	10	5	44	—	2	—	21	—	1	—	11	—	—	—
—	—	—	—	2	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12	—	—	—	1	5	—	—	1	—	—	—	1	—	—	—	11	4	—	—
—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	20	10	1	2	23	1	—	—	13	—	—	—	14	11	—	—
—	—	7	—	—	2	—	—	1	—	—	—	3	—	—	—	—	1	—	—
—	—	13	—	1	9	—	1	1	—	—	—	7	—	—	—	30	7	—	—
—	—	—	—	2	—	—	—	12	—	—	—	5	—	1	—	2	—	—	—
—	—	—	—	3	5	1	1	5	—	—	—	—	—	—	—	2	—	—	—
—	—	2	—	5	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—
14	—	171	—	180	102	18	33	576	16	—	—	318	—	7	4	138	152	1	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	53	—	18	9	1	—	38	—	—	—	29	—	—	—	46	12	—	—
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	4	—	124	42	5	4	44	1	1	—	41	—	4	3	128	28	1	1
2	—	—	—	1	83	—	2	—	—	—	—	—	—	—	—	2	2	—	—
—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	1	—	—
—	—	—	—	1	—	—	—	2	—	—	—	—	—	—	—	8	1	—	—
4	—	—	—	1	2	1	1	—	—	—	—	2	—	—	—	—	1	—	—
—	—	5	—	14	9	—	—	4	—	—	—	1	—	3	—	3	7	—	—
—	—	—	—	3	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	—	—	—	2	—	—	2	1	—	—	—	—	—	—	9	4	—	—
—	—	64	—	3	7	—	—	10	—	—	—	4	—	—	—	1	3	—	—
—	—	6	—	3	—	—	—	37	—	—	—	—	—	—	—	4	4	—	—
—	—	2	—	—	2	—	—	3	—	—	—	1	—	—	1	—	2	—	—
—	—	—	—	—	4	—	1	2	—	—	—	—	—	—	—	—	—	—	—
40	—	337	—	444	325	37	50	812	19	3	—	459	—	17	8	474	246	7	—

Measles		Mumps		Tuberculosis (pulmonary)		Tuberculosis (other forms)		Syphilis		Conjunctivitis Infectious		Gonorrhoea		Cerebrospinal Meningitis		Pneumonia (lobar)		Septic Sore Throat	
(19-B)		(19-C)		(28-29)		(30-35)		(37)		(38-A)		(38-C)		(61-C)		(92-1)		(100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	2	—	—
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	—	—	1	—	—	—	1	—	—	—	1	—	—	1	—	—	—	—
—	—	—	—	1	1	—	—	2	—	—	—	—	—	—	—	1	1	—	—
—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	2	—	—	—
—	—	—	—	5	6	—	1	2	—	—	—	—	—	—	—	3	2	—	—
—	—	—	—	2	1	—	—	—	—	—	—	—	—	—	—	1	2	—	—
—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	1	—	2	—	—
—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
—	—	1	—	6	4	—	—	2	1	—	—	—	—	1	—	1	4	—	—
—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	1	4	—	—
—	—	1	—	17	14	—	2	8	1	—	—	3	—	2	2	11	18	—	—

C.—Cases D.—Deaths

Digitized by Google

CASES AND DEATHS FROM

1920 New London County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Bozrah	2	—	14	—	4	—	—	—	1	—	—	—	—	—
Colchester	—	—	1	—	1	—	30	—	3	1	101	2	1	—
East Lyme	—	—	14	1	—	—	—	—	5	—	—	7	4	—
Franklin	—	—	—	—	—	—	11	—	—	—	13	1	1	—
Griswold	2	—	36	1	1	—	26	—	30	3	60	4	—	—
Groton	2	—	211	—	12	—	46	—	32	—	172	7	7	—
Lebanon	1	—	14	—	8	—	—	—	1	—	8	1	—	—
Ledyard	1	1	—	—	—	—	—	1	—	—	1	1	—	—
Lisbon	—	—	1	—	—	—	—	1	1	—	4	—	—	—
Lyme	—	—	8	—	—	—	—	—	—	—	68	1	5	—
Montville	—	—	15	—	17	—	—	—	1	—	9	—	—	—
New London	10	—	854	5	62	1	164	5	86	2	685	26	67	—
North Stonington	—	—	5	—	—	—	3	—	—	—	16	1	—	—
Norwich	13	4	142	4	32	—	18	7	59	3	527	35	2	—
Old Lyme	—	—	6	—	—	—	9	—	—	—	26	1	1	—
Preston	3	1	4	—	—	—	13	—	3	1	9	2	—	—
Salem	—	—	6	—	—	—	8	—	—	—	—	—	—	—
Sprague	1	—	1	—	11	—	3	—	6	—	6	2	—	—
Stonington	4	—	100	—	11	—	15	1	31	1	69	2	5	—
Voluntown	—	—	4	—	—	—	8	—	—	—	21	—	—	—
Waterford	1	—	4	—	4	1	5	1	2	—	24	—	7	—
Total	38	6	1,440	11	163	2	359	16	261	11	1,849	93	100	—

1920 Fairfield County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Bethel	2	—	11	—	14	—	3	—	13	—	—	—	—	—
Bridgeport	20	3	321	11	287	6	286	24	437	45	1,925	141	49	2
Brookfield	—	—	1	—	1	—	8	—	—	—	3	—	—	—
Danbury	13	1	104	3	23	—	4	1	16	2	532	17	1	—
Darien	—	—	40	—	2	—	4	—	4	—	57	1	12	—
Easton	—	—	19	—	4	—	—	—	—	—	2	3	—	—
Fairfield	3	—	—	—	8	—	58	—	31	10	—	5	22	—
Greenwich	2	—	86	—	46	—	129	3	193	8	455	18	176	—
Monroe	—	—	12	—	6	—	1	—	2	—	6	—	2	—
New Canaan	3	1	55	—	—	—	59	2	8	1	198	3	4	—
New Fairfield	1	—	3	—	—	—	—	—	—	—	—	—	—	—
Newtown	—	—	27	—	6	—	—	—	5	—	26	—	5	—
Norwalk	7	1	66	3	17	—	18	7	60	4	57	29	5	—
Redding	1	1	23	—	6	—	1	—	1	—	34	—	6	—
Ridgefield	—	—	30	—	—	—	3	—	—	—	206	3	5	—
Shelton	—	—	28	—	21	—	62	4	15	1	785	21	58	1
Sherman	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stamford	5	—	286	3	72	1	121	8	46	5	164	33	66	—
Stratford	2	—	27	2	34	—	23	3	51	2	40	9	4	—
Trumbull	1	—	9	—	5	—	—	—	1	—	69	—	15	—
Weston	—	—	—	—	3	—	4	—	—	—	7	1	2	—
Westport	—	—	1	—	16	—	8	—	24	1	63	4	11	—
Wilton	1	—	7	—	3	—	—	—	2	—	16	1	7	—
Total	61	7	1,156	22	574	7	792	52	909	79	4,645	289	450	3

C.—Cases D.—Deaths

Digitized by Google

REPORTABLE DISEASES, 1920

German Measles (19-B) C.	German Measles (19-B) D.	Mumps (19-C) C.	Mumps (19-C) D.	Tuberculosis (pulmonary) (28-29) C.	Tuberculosis (pulmonary) (28-29) D.	Tuberculosis (other forms) (30-35) C.	Tuberculosis (other forms) (30-35) D.	Syphilis (37) C.	Syphilis (37) D.	Conjunctivitis Infectious (38-A) C.	Conjunctivitis Infectious (38-A) D.	Gonorrhoea (38-C) C.	Gonorrhoea (38-C) D.	Cerebrospinal Meningitis (61-C) C.	Cerebrospinal Meningitis (61-C) D.	Pneumonia (lobar) (92-1) C.	Pneumonia (lobar) (92-1) D.	Septic Sore Throat (100) C.	Septic Sore Throat (100) D.
—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	11	—	2	1	—	1	—	—	—	—	—	—	—	—	3	2	—	—
—	—	1	—	—	—	—	1	22	—	—	—	6	—	—	—	1	2	—	—
—	—	5	—	1	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—
—	—	—	—	8	3	—	—	—	—	—	—	—	—	—	—	8	4	—	—
1	—	8	—	2	3	—	—	4	—	2	—	4	—	2	1	24	1	—	—
—	—	—	—	11	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	1	—	2	1	—	—	—	—	—	—	—	—	—	—	5	—	—	—
—	—	9	—	4	1	—	—	1	—	—	—	—	—	—	—	3	4	—	—
—	—	26	—	46	18	4	3	46	2	1	—	10	—	6	3	125	18	—	—
—	—	—	—	5	2	—	—	—	—	—	—	—	—	—	—	1	—	—	—
1	—	41	—	25	95	1	8	19	4	—	—	9	—	—	—	26	20	—	—
1	—	—	—	3	—	—	—	2	—	—	—	3	—	—	—	1	—	—	—
—	—	—	—	39	23	2	2	—	—	—	—	2	—	—	—	9	4	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	1	1	—	1	—	—	—	—	—	—	—	—	1	3	—	—
—	—	20	—	4	7	2	2	2	—	—	—	—	—	1	—	4	7	—	—
—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
—	—	—	—	1	1	—	1	2	—	—	—	—	—	—	—	—	3	—	—
3	—	125	—	156	159	9	19	98	6	3	—	34	—	9	4	213	71	—	—

German Measles (19-B) C.	German Measles (19-B) D.	Mumps (19-C) C.	Mumps (19-C) D.	Tuberculosis (pulmonary) (28-29) C.	Tuberculosis (pulmonary) (28-29) D.	Tuberculosis (other forms) (30-35) C.	Tuberculosis (other forms) (30-35) D.	Syphilis (37) C.	Syphilis (37) D.	Conjunctivitis Infectious (38-A) C.	Conjunctivitis Infectious (38-A) D.	Gonorrhoea (38-C) C.	Gonorrhoea (38-C) D.	Cerebrospinal Meningitis (61-C) C.	Cerebrospinal Meningitis (61-C) D.	Pneumonia (lobar) (92-1) C.	Pneumonia (lobar) (92-1) D.	Septic Sore Throat (100) Co	Septic Sore Throat (100) D.
—	—	—	—	—	5	—	—	—	—	—	—	2	—	—	—	6	5	—	—
1	—	96	1	161	126	19	28	268	16	1	—	236	1	17	10	94	110	2	1
—	—	—	—	2	—	—	1	—	—	—	—	—	—	—	—	4	1	—	—
—	—	6	—	4	27	—	4	22	—	—	—	7	—	1	1	2	15	—	—
—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	6	6	—	—
—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1	—	—
—	—	18	—	—	7	—	2	—	—	—	—	2	—	—	—	1	6	1	—
3	—	15	—	37	16	2	—	8	5	1	—	10	—	2	3	65	16	1	—
—	—	3	—	1	1	—	—	—	—	—	—	2	—	—	—	3	—	—	—
1	—	6	—	12	8	1	—	1	—	—	—	—	—	—	—	14	2	—	—
—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—
—	—	32	—	1	4	—	2	—	—	—	—	—	—	—	—	7	1	—	—
8	—	27	—	37	25	2	3	20	2	—	—	11	—	—	1	5	22	—	—
—	—	1	—	—	2	—	—	—	—	—	—	—	—	—	—	4	1	—	—
—	—	44	—	4	2	—	—	3	—	—	—	—	—	—	—	1	—	—	—
—	—	—	—	11	102	1	1	7	—	—	—	4	—	—	—	53	5	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	34	—	48	28	—	8	22	1	—	—	6	—	3	4	29	27	—	—
2	—	—	—	13	9	1	4	14	—	—	—	4	—	1	—	3	8	—	—
—	—	38	—	5	2	—	—	1	—	—	—	1	—	—	—	—	—	—	—
—	—	6	—	—	1	—	—	—	—	—	—	—	—	—	—	1	1	—	—
—	—	15	—	4	5	—	1	4	—	—	—	3	—	1	—	11	10	—	—
—	—	—	—	5	4	—	—	2	—	—	—	2	—	—	—	2	—	—	—
20	—	342	1	345	375	26	54	373	24	2	—	291	1	25	19	313	237	4	1

C.—Cases D.—Deaths

Digitized by Google

Digitized by Google

BUREAU OF PREVENTABLE DISEASES

FOR THE YEAR 1921

Digitized by Google

Digitized by Google

REPORT OF THE BUREAU OF PREVENTABLE DISEASES

John T. Black, M. D., State Commissioner of Health,

Hartford, Conn.

SIR:—I submit herewith the annual report of the Bureau of Preventable Diseases for the year ending December 31, 1921.

The personnel of the Bureau was as follows:

Daniel E. Shea, M. D., Chief, Division of Venereal Diseases.
William B. Terhune, M. D., Chief, Division of Mental Hygiene.
Howard A. Lanpher, M. D., Epidemiologist (Part-Time).
Miss F. M. Thompson, Stenographer.
Miss M. A. Miskill, Statistician.
Miss E. E. Burgey, Clerk.

During the year Dr. Shea had the supervision of the six state clinics and five treatment stations. Dr. Howard Lanpher was detailed by the U. S. Public Health Service to the department during the year. He assisted in the work of venereal disease control and in the investigation of certain typhoid cases. The reports of the Divisions of Venereal Diseases and Mental Hygiene follow this report.

The work of the Bureau in recording and investigating the incidence of disease in the State, depends to a large extent on the cases reported by physicians to health officers and by health officers to this Department. Because of this, certain attempts to prevent outbreaks and epidemics of disease have proven futile in the past—and will in the future—wherever physicians and people in a community fail to report the presence of cases of communicable disease to their local health officer promptly.

During 1921, continued improvement was noted in the reporting of cases of disease, this being reflected to a certain degree in the lowering of the fatality rates in most of the reportable diseases,—notably typhoid fever, tuberculosis, and diphtheria. On the other hand, the fatality rate of scarlet fever increased and, without a doubt, indicates a true and marked rise in the virulence of the virus causing it.

Digitized by Google

FATALITY RATES OF COMMON REPORTABLE DISEASES

Disease	Fatality Rates (Deaths per each 100 reported cases) 1917	1918	1919	1920	1921
Cerebrospinal Meningitis	60.3	65.8	100.0	69.2	60.3
Diphtheria	9.9	8.6	7.5	6.3	5.2
Measles	1.7	1.6	1.7	1.6	0.9
Poliomyelitis	55.2	31.4	83.3	56.1	29.1
Scarlet Fever	1.4	2.3	1.7	1.8	2.5
Tuberculosis (all forms)	97.6*	95.2	82.9	80.4	69.7
Typhoid Fever	23.4	16.7	13.5	13.6	10.7
Whooping cough	5.9	9.8	6.3	6.0	4.7

*Pulmonary Fatality Rate (Cases of other forms not reported until 1918).

To attain better reporting, the names of all persons whose deaths were due to reportable diseases, together with the date of death, place of death, name of attending physician, and duration of the illness—supplied by the Bureau of Vital Statistics—were checked with the cases of diseases reported by the health officers. If the death had not been reported previously as a case, a circular letter (sample accompanying) was forwarded to each health officer, containing the above information with the request that the matter be taken up with the physician failing to report and to have the case reported in the customary manner by the physician.

In addition, all positive laboratory findings at the Department laboratory at New Haven were checked with cases of disease reported, and if not reported within five days thereafter, a circular letter (sample accompanying) with name of patient, laboratory report, name of physician, and date, was sent to the health officer.

These two checks—the death list check and the positive laboratory report check—not only aided the health officer in controlling disease but greatly assisted in a better reporting of cases of reportable diseases. It has also greatly stimulated the search for diphtheria bacilli carriers.

Digitized by Google

Letter to Health Officer on Unreported Case Having Positive Laboratory Findings

Dear Sir:

(Material examined) obtained from *(name of patient)* sent to our laboratory by *(name of physician)* was examined *(date)* and found to contain.....bacilli.

As we have not received your report of this case, we assume that it has not been reported to you and would suggest that you get in touch with the physician regarding the matter.

Please send us a record of the case on a Daily Report Card.

Very truly yours,

Director,

Bureau of Preventable Diseases

Letter to Health Officer on Unreported Case Who Died of a Reportable Disease

Dear Sir:

Copies of death certificates filed show that the following persons died of reportable diseases in .....(*Town*)..... and reference to the files of this Department shows these cases were not reported by you:

Disease	*Name of Person*	*Physican signing Certificate*	*Date of Death*	*Duration of Disease*

Incomplete reporting of cases has resulted in statistics showing more deaths than cases for certain diseases, producing incorrect morbidity and fatality rates. It is suggested that the physicians be requested to report these cases and that they be reported to this department in the customary manner.

Sincerely yours,

Director.

Bureau of Preventable Diseases

Many requests from health officers for assistance were received and usually answered by personal visits, to confer over the diagnosis of a puzzling illness, an outbreak of disease, a new program for preventing disease, or other problems on the control of preventable diseases.

One new pamphlet was issued during the year,—a four-page pamphlet on diphtheria, which has been furnished

Digitized by Google

to health officers for distribution to physicians for their patients, for distribution to children in schools, and for any other public distribution the health officers desired.

Disease Made Reportable

In 1921 actinomycocis, botulism, epidemic encephalitis, hookworm infection, and trichinosis were made reportable diseases.

The increasing number of cases of epidemic encephalitis and trichinosis in the state made the reporting of these diseases advisable.

Botulism, the type of food poisoning due to the bacillus botulinus, is becoming more frequent throughout the country. Instances are on record of epidemics of this disease being caused by spinach, string beans, ripe olives and corn packed in cans or glass containers.

A supply of botulinus antitoxin was obtained and is kept on hand for emergency prophylactic or treatment use, if cases of botulism poisoning should appear in Connecticut.

Reciprocal Reporting of Disease

During the year the increasing use by health officers of the space on the daily report card calling for the "Source of Infection," proved its value. It assisted in making this department the "clearing house", for following up cases of disease that apparently received their infection outside of the town or city reporting the case.

The cases within the state where the department notifed other towns and cities were innumerable.

The interstate notification of cases are in the accompanying table:

Digitized by Google

SUMMARY OF INTERSTATE RECIPROCAL NOTIFICATIONS OF DISEASE

Forwarded to Other State Health Departments in 1921

Disease	Cases of Disease Entering or Leaving Connecticut	Contacts With Cases of Disease Entering or leaving Connecticut	Cases of Disease on Milk Farms Sending Milk To Other States	State Referred to
DIPHTHERIA	13 Cases (3 carriers)	5 Contacts	1 case	Rhode Island, New York, New Jersey, Massachusetts
ENCEPHALITIS, (epidemic)	2 Cases	—	—	New York, New Jersey
LEPROSY	1 Case	—	—	New York
MEASLES	7 Cases	—	—	Rhode Island, New Jersey Massachusetts
PARATYPHOID	1 Case	—	—	New York
POLIOMYELITIS	5 Cases	—	—	New Hampshire, New York
SCARLET FEVER	6 Cases	200 Contacts*	1 case	Rhode Island, New York, Massachusetts
SMALLPOX	3 Cases	1 Suspect	—	Michigan, North Dakota, New York, Vermont
TYPHOID FEVER	16 Cases	—	—	Quebec, Maryland, New Jersey, Ontario, New York, Massachusetts
TUBERCULOSIS, (pulmonary)	12 Cases	—	—	Texas, New York, New Jersey, Massachusetts

*200 pupils of boys' school were allowed to return home by the school authorities after appearance of scarlet fever cases. The following state health departments were notified:

New York	Ohio	Michigan	Arkansas
Indiana	Minnesota	Louisiana	Florida
Kentucky	Nebraska	Texas	Wyoming
Washington	Massachusetts	Tennessee	Missouri
Pennsylvania	California	North Carolina	West Virginia
Rhode Island	Illinois	New Jersey	Delaware
Oklahoma	Kansas	Washington, D. C.	

Digitized by Google

OUTBREAKS AND DISEASE INVESTIGATED IN 1921.

TYPHOID FEVER:

Rocky Hill
Hartford (4)
Windsor
Middletown (2)
Cromwell (3)
Enfield
Shelton
Naugatuck
Derby
New Haven
East Granby
Berlin
Groton
Norwich

DIPHTHERIA:

New Britain
Windsor Locks
Berlin
Suffield
Cromwell
East Hartford
Hamden
East Haddam
Meriden
Thomaston
Canterbury
Enfield

SCARLET FEVER:

Stonington
East Windsor (3)
Newington
Simsbury (3)
Meriden (2)
South Windsor
New Hartford
Windsor
Woodstock
Groton
Watertown
Ellington
Manchester
Wallingford
North Canaan
Andover
Putnam
Bloomfield

SMALLPOX AND SUSPECTED SMALLPOX:

Bristol
Manchester
South Windsor
Windsor Locks
New Canaan
Simsbury
Cromwell

MEASLES:

New Hartford
Ashford
Mansfield

POLIOMYELITIS:

Putnam
Suffield

DYSENTERY:

Litchfield
Stratford

TYPHUS (suspected):

Suffield

LEPROSY:

Waterbury

ANTHRAX (suspected):

Stonington

Digitized by Google

Field Work

During the year, conferences were held or investigations of disease made in co-operation with 129 health officers.

Investigations of disease were made as follows:

Typhoid Fever	20
Diphtheria	12
Smallpox	7
Scarlet Fever	23
Measles	3
Poliomyelitis	2
Dysentery	1
Typhus (Suspected)	1
Leprosy	1
Anthrax (suspected)	1
	71

The accompanying map indicates the localities in the state covered by the Bureau during the year.

In addition the director gave 41 lectures before Rotary and Kiwanis Clubs, state and local Public Health Associations, Visiting Nurse Associations, Medical Societies, factory groups and popular groups.

Baby Clinic

At the request of the committee in charge of a Baby Clinic at the Willimantic Elks Fair in September, a clinic was conducted on September 3rd in co-operation with the local physicians. At this clinic, a blank was used to note the age, color, sex, registration of birth, bottle or breast fed, height, weight, physical defects, and general condition. There were 71 babies brought to the conference.

ELKS BABY CONFERENCE

September 3, 1921

Name ..... Address .....

Age in years.....mos.....days..... Color..... Sex.....

Is birth registered..... Is baby breast fed Height in inches.....

bottle fed Weight.....

Normal for this age Height

Weight

Physical defects:

Head

Spine

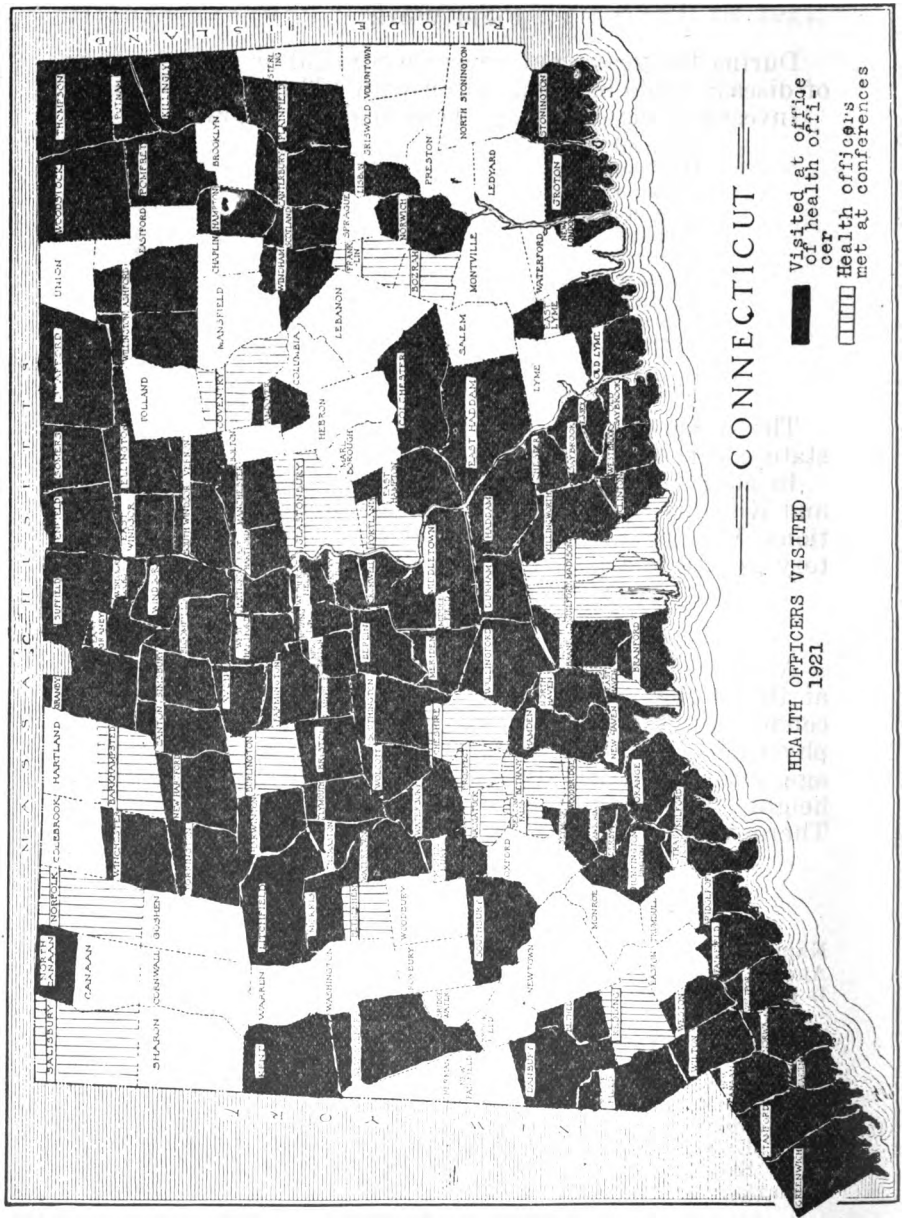
Extremities

Skin

General Condition

Remarks:

Digitized by Google



Digitized by Google

School Survey

At the request of the Southington School Committee, a survey was made of certain of the Southington schools not covered in the survey made in 1919 (See 1919 and 1920 Annual Report).

A two-day survey was made of 100 pupils in the Lincoln and Milldale Schools, 10 of which were examinations made of pupils sent by teachers for some evident physical defect.

The following defects were noted:

	Lincoln	Milldale
Pupils examined	60 pupils	30 pupils
Not vaccinated against smallpox	36 "	19 "
Cavities in teeth (unfilled)	53 "	29 "
Varying degrees of loss of hearing	5 "	3 "
Pediculosis	8 "	5 "
Variable loss of eyesight	7 "	3 "

Tooth-brush inquiries showed that 66 always used a tooth-brush, 18 occasionally and 7 had none. A total of 56 had been treated by a dentist, 33 of whom had gone only to have teeth pulled and not filled. The remaining 24 never had been treated by a dentist although all of these showed evidences that treatment was necessary.

Only 25 had been vaccinated against smallpox, and 17 of this number had been vaccinated while residing in some other city before they moved to Southington.

At the Lincoln School many of the seats were of the non-adjustable kind and were responsible for many of the children assuming the bad postures that were seen.

It was evident that there are many opportunities for educational work in public health among these young school children, in a manner which will bring out to them that by following certain rules and having medical and dental care, toothache, disease, bodily discomfort and improper physical development later will be avoided.

A report was made to the school committee with recommendations for a school physician for each school. In addition, the matter was taken up with the local medical society and at the beginning of the school session after vacation, each school had a physician to supervise this work.

Publications

Each week the Weekly Morbidity Bulletin was issued giving the location of all diphtheria, measles, scarlet fever, smallpox, typhoid and whooping cough cases. The total cases of the other reportable diseases were also given in this report. An additional sheet is sent out with the Morbidity Bulletin discussing timely topics.

Digitized by Google

Cancer

An educational campaign on cancer was carried on by the American Society for the Prevention of Cancer throughout the United States during the week of October 30th to November 5th. In Connecticut the department had charge of the campaign, and in cities of 10,000 population or over the campaign was in charge of the local health officers, medical societies and physicians.

During Cancer Week in Connecticut, measures were taken to make the campaign an educational campaign and included the following details:

During "Cancer Week" 45 theaters in Connecticut showed a slide bearing the following information:

"CANCER WEEK
1390 PERSONS DIED OF CANCER
in Conn. in 1920.
EARLY DIAGNOSIS AND PROMPT TREATMENT
will often CURE CANCER.
If you SUSPECT Cancer,
SEE YOUR DOCTOR NOW!
Local Dept. of Health,
Connecticut State Dept. of Health."

There were 45 lectures given during this week by physicans and local health officers. Of this number, 6 were before medical societies, 15 before mixed lay audiences, 6 before nursing organizations, 14 at women's clubs, 3 before Rotary and Kiwanis Clubs, and 1 lecture to a high school group. There were 5,900 people who attended the lectures. In addition, 128 churches brought the matter before Sunday congregations.

Publicity was carried out through 130 newspapers of the state to whom 5 articles were sent with the Weekly Morbidity Report. Circular letters were sent to all health officers, school nurses, public health nurses and registered nurses. Each physician in the state was sent a copy of "What We Know About Cancer," a special handbook for the medical profession prepared by the American Medical Association and the American Society for the Control of Cancer.

There were 59,000 copies of leaflets and pamphlets distributed which were received from the American Society for the Control of Cancer. Several city departments of health printed and distributed additional literature.

Digitized by Google

The campaign was well received by the people and much credit is due to physicians for the manner in which they, singly and through medical societies, assisted in educating the public to the necessity of the early treatment of cancer.

The director gave lectures on cancer in Stafford, Watertown, West Hartford, New Haven, and Suffield.

Diseases on the Premises of Milk Handlers

During 1921 many cases of disease appeared on the premises of milk handlers. These cases were carefully investigated by health officers to prevent the spread of disease by the milk supply. The cases reported during the year were as follows:

SUMMARY OF DISEASE ON PREMISES OF MILK HANDLERS

Month	Disease	Number of Cases	Town or City
January	Scarlet Fever	1	Newington
	"	1	Simsbury
	"	1	Manchester
	"	1	Westport
	"	1	Darien
	Measles	1	Eastford
	Diphtheria	4	Plymouth
February	Scarlet Fever	1	Wilton
April	Measles	3	North Canaan
	"	1	North Canaan
	"	1	North Canaan
	Scarlet Fever	4	Ellington
	"	3	Sharon
May	Measles	1	North Canaan
	Scarlet Fever	1	Brooklyn
	"	1	North Canaan
June	Scarlet Fever	1	North Canaan
	Typhoid Fever	3	Farmington
	"	1	Stonington
	"	1	Meriden (Town)
July	Scarlet Fever	1	North Canaan
August	Typhoid Fever	1	Greenwich
October	Typhoid Fever	1	Wilton
November	Diphtheria	1	Pomfret

As far as could be ascertained there were no outbreaks of disease that were traceable to the cases given above.

Distribution of Biological Supplies

Two additional biological products were added to those already being distributed. In August the distribution of typhoid vaccine for immunizing persons against typhoid fever was begun. In October, a one (1%) per cent. silver nitrate solution was issued for the prevention of ophthalmia neonatorum cases.

Digitized by Google

During 1921, the following biological material was available to all health officers of the state on request:

Biologic	Remarks
DIPHTHERIA ANTITOXIN	Prophylactic dose, 1,000 units for immunizing purposes. Treatment doses, 5,000 and 10,000 units.
DIPHTHERIA SCHICK TEST	For determining whether persons are susceptible to diphtheria or not. Each package contains material to test 10 individuals.
DIPHTHERIA TOXIN-ANTITOXIN	For immunizing persons against diphtheria. Each package contains 3 vials, sufficient to immunize one person.
TYPHOID AND PARATYPHOID VACCINE	For immunizing persons against typhoid and paratyphoid fevers. Issued in packages containing material to immunize one person.
TETANUS ANTITOXIN	Prophylactic dose 1,500 units for immunizing persons against tetanus. Treatment dose, 5,000 units.
ANTHRAX	Treatment doses sent out on notice of an anthrax case.
SILVER NITRATE	For prophylactic purposes in preventing infection of the eyes of the new-born. These are issued in packages of material sufficient for 2 babies or 12 babies.
VACCINE VIRUS (SMALLPOX)	Issued in packages containing material for immunizing 5 and 10 persons against smallpox.
NEOARSPHENAMINE	For treating syphilis. Issued in 0.3, 0.6 and 0.9 gr. packages to physicians in charge of state clinics and treatment stations.

Digitized by Google

DISTRIBUTION OF ANTITOXIN, VACCINES, NEOARSPHENAMINE AND SILVER NITRATE, 1921.

Month	Diphtheria Antitoxin 1000 Unit Pkg.	Diphtheria Antitoxin 5000 Unit Pkg.	Diphtheria Antitoxin 10000 Unit Pkg.	Schick Test Pkg.	Diphtheria Toxin Antitoxin	Tetanus Antitoxin 1500 Unit Pkg.	Tetanus Antitoxin 5000 Unit Pkg.	Vaccine Virus 5's	Vaccine Virus 10's	Neoarsphenamine	Typhoid Vaccine	Silver Nitrate 2 Ambule Pkg.	Silver Nitrate 12 Ambule Pkg.
Jan.	354	465	517	40	11	56	87	4	6	455			
Feb.	237	341	407	201	63	152	47	56	28	410			
Mar.	244	208	247	232	506	60	67	56	15	514			
Apr.	100	139	253	160	123	134	19	52	150	360			
May	113	190	254	114	59	100	20	90	198	169			
June	109	243	257	43	12	300	62	60	74	446			
July	112	112	124	53	159	336	198	58	98	676			
Aug.	168	187	165	16	10	221	33	61	231	200	6		
Sept.	215	280	287	81	152	235	63	205	357	462	152	102	
Oct.	412	374	285	61	36	169	12	51	82	377	105	33	19
Nov.	294	239	384	80	65	165	50	49	26	414	57	21	9
Dec.	366	513	497	66	100	154	102	157	116	554	281	2,194	154
Total	2,664	3,291	3,777	1,097	1,296	2,082	760	899	1,381	5,037	601	2,350	182

Digitized by Google

Yearly Statistics

All morbidity and mortality rates in this report are based on the estimated population of 1,420,576, as of July 1, 1921, based on the federal censuses of 1,114,756 in 1910 and 1,380,631 in 1920.

General Discussion of Disease Prevalence

The particular events that are outstanding during 1921 were the low tuberculosis mortality rate, the low diphtheria fatality rate, and the few cases of disease (six typhoid cases) in the state that were traceable to contaminated milk.

Of the more common diseases, the reported cases of chickenpox, poliomyelitis, paratyphoid fever, infectious conjunctivitis, mumps, typhoid fever, septic sore throat, malaria, tetanus, and trachoma increased over the cases reported in 1920.

Typhoid fever was epidemic in several places, a total of 171 out of 460 cases being epidemic cases. One epidemic of paratyphoid fever was reported. These epidemics are considered under the individual diseases.

Several diseases, noticeably influenza, measles, lobar pneumonia, and whooping cough, showed a marked decrease in cases reported compared with 1920. Others, such as diphtheria, epidemic cerebrospinal meningitis, and tuberculosis decreased to a lesser extent.

Smallpox appeared in December in Bridgeport, the cases proving to be the beginning of an epidemic that continued into 1922.

It is probable that certain of the diseases, such as trachoma, that were considered rarely present in Connecticut a few years ago, will be more often reported as more accurate diagnoses are made of these so-called "rare" diseases. Other diseases likely to be more commonly reported in the future, are bacillary dysentery and amoebic dysentery which undoubtedly exist but are considered severe intestinal disturbances or chronic diarrhoeas.

Digitized by Google

CASES OF REPORTABLE DISEASES REPORTED FOR 1917-1921

DISEASE	1917	1918	1919	1920	1921
*Actinomycosis	—	—	—	—	—
Anthrax	1	—	1	1	—
*Botulism	—	—	—	—	—
Cerebrospinal Meningitis	312	117	44	91	78
Chickenpox	156	760	1,350	1,466	2,272
Cholera, Asiatic	—	—	—	—	—
Conjunctivitis, Infectious	8	28	108	10	167
Diphtheria	2,367	2,348	3,388	3,754	3,361
Dysentery (amoebic)	—	—	—	—	—
Dysentery (Bacillary)	—	5	5	10	16
*Encephalitis, Epidemic	—	—	4	40	74
Favus	—	5	11	4	1
German Measles	—	1,723	99	112	96
Glanders	—	—	—	—	—
*Hookworm Infection	—	—	—	—	—
Leprosy	—	2	1	1	1
Malaria	—	4	8	22	27
Measles	7,462	5,450	5,884	8,425	4,620
Mumps	510	1,552	335	1,492	2,294
Paratyphoid Fever	—	13	18	11	48
Pellagra	7	1	1	—	—
Plague	—	—	—	—	—
Poliomyelitis	29	51	12	41	86
Rabies	4	2	—	—	—
Scarlet Fever	1,528	1,550	2,663	4,028	4,001
Septic Sore Throat	11	113	24	19	35
Smallpox	423	94	6	2	8
Tetanus	—	4	4	13	22
Trachoma	5	10	5	16	24
*Trichinosis	—	—	—	2	15
Tuberculosis (pulmonary)	1,795	1,821	1,640	1,905	1,828
" (other forms)	—	346	420	148	120
Typhoid Fever	508	443	415	426	460
Typhus Fever	—	1	—	—	1
Whooping Cough	1,911	2,836	904	3,649	2,905
Yellow Fever	—	—	—	—	—
	17,037	19,279	17,350	25,688	22,560
Influenza	—	105,056	10,664	23,931	282
Pneumonia (lobar)	—	2,256	545	1,545	1,060
Gonorrhoea	258	828	1,350	1,345	1,025
Syphilis	104	379	2,014	2,238	2,505
	17,399	127,798	31,923	54,747	27,432

*Made reportable Nov. 11, 1921.

Digitized by Google

The following table gives in detail the information in regard to the yearly prevalence of disease with the morbidity, mortality and fatality rates for each reportable disease:

CONNECTICUT MORBIDITY, MORTALITY AND FATALITY RATES, 1921

Disease	Cases	Morbidity Rate (per 100,000)	Deaths	Mortality Rate (per 100,000)	Fatality Rate (Per Cent.)
Anthrax	0	—	0	—	—
Cerebrospinal Meningitis	78	5.5	47	3.3	60.3
Chickenpox	2272	159.9	6	0.4	0.3
Cholera, Asiatic	0	—	0	—	—
Conjunctivitis, Infectious	167	11.8	0	—	—
Diphtheria	3361	236.6	176	12.4	5.2
Dysentery, Amoebic	0	—	0	—	—
Dysentery, Bacillary	16	1.1	9	0.6	56.3
Encephalitis, Epidemic	74	5.2	33	2.3	44.6
Favus	1	0.1	0	—	—
German Measles	96	6.8	0	—	—
Glanders	0	—	0	—	—
Influenza	282	19.9	193	13.6	68.4
Leprosy	1	0.1	0	—	—
Malaria	27	1.9	2	0.1	7.4
Measles	4620	325.0	43	3.0	0.9
Mumps	2294	161.5	2	0.1	0.1
Paratyphoid Fever	48	3.4	0	—	—
Pellagra	0	—	0	—	—
Plague	0	—	0	—	—
Pneumonia (Lobar)	1060	74.6	640	45.1	60.4
Poliomyelitis	86	6.1	25	1.8	29.1
Rabies (in humans)	0	—	0	—	—
Scarlet Fever	4001	281.6	102	7.2	2.5
Septic Sore Throat	35	2.5	9	0.6	25.7
Smallpox	8	0.6	0	—	—
Tetanus	22	1.5	17	1.2	77.3
Trachoma	24	1.7	0	—	—
Trichinosis	15	1.1	1	0.1	6.7
Tuberculosis (Pulmonary)	1828	128.7	1186	83.5	64.9
" (Other Forms)	120	8.4	172	12.1	—
Typhoid Fever	460	32.4	49	3.4	10.7
Typhus Fever	1	0.1	1	0.1	100.0
Whooping Cough	2905	204.5	137	9.6	4.7
Yellow Fever	0	—	0	—	—
Gonorrhoea	1025	72.2	7	0.5	0.7
Syphilis	2505	176.3	90	6.3	3.6

Digitized by Google

Monthly Incidence of Disease

The distribution of cases each month shows certain diseases as measles, scarlet fever, epidemic encephalitis, pulmonary tuberculosis, and whooping cough to have been most prevalent in the first quarter of the year.

During the summer, typhoid and paratyphoid increased markedly and during the fall and last quarter of the year, diphtheria alone was more prevalent than during any other time of the year.

INCIDENCE OF REPORTABLE DISEASES BY MONTHS, 1921

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
*Actinomycosis	—	—	—	—	—	—	—	—	—	—	—	—	—
Anthrax	—	—	—	—	—	—	—	—	—	—	—	—	—
*Botulism	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebrospinal Men.	6	8	6	11	9	9	11	1	7	4	5	1	78
Chickenpox	226	323	394	311	251	158	56	14	22	55	173	289	2,272
Cholera, Asiatic	—	—	—	—	—	—	—	—	—	—	—	—	—
Conjunctivitis	8	35	17	29	60	17	1	—	—	—	—	—	167
Diphtheria	435	389	295	202	178	205	149	157	231	361	384	375	3,861
Dysentery (amoebic)	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery, (bacillary)	—	—	—	—	—	—	5	6	1	3	1	—	16
*Encephalitis, Epid.	3	16	16	9	5	4	5	5	4	5	—	2	74
Favus	—	—	1	—	—	—	—	—	—	—	—	—	1
German Measles	4	8	22	21	7	13	3	4	1	4	1	8	96
Glanders	—	—	—	—	—	—	—	—	—	—	—	—	—
*Hookworm Infection	—	—	—	—	—	—	—	—	—	—	—	—	—
Influenza	56	44	38	49	23	7	2	6	5	15	12	25	282
Leprosy	—	—	—	1	—	—	—	—	—	—	—	—	1
Malaria	—	—	1	4	4	5	3	4	5	1	—	—	27
Measles	571	756	830	542	342	287	147	59	39	110	395	542	4,620
Mumps	270	342	444	343	354	294	73	34	14	17	52	57	2,294
Paratyphoid Fever	—	—	—	—	31	3	2	8	2	—	1	1	48
Pellagra	—	—	—	—	—	—	—	—	—	—	—	—	—
Plague	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia (lobar)	135	150	177	130	115	64	28	25	20	53	72	91	1,060
Poliomyelitis	2	1	2	—	1	7	13	21	18	13	5	3	86
Rabies	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever	630	679	588	397	299	179	146	82	103	186	301	411	4,001
Septic Sore Throat	1	10	1	4	3	2	1	3	3	2	—	5	35
Smallpox	1	—	1	1	—	—	—	—	2	—	—	3	8
Tetanus	2	1	2	—	—	—	9	3	2	2	—	1	22
Trachoma	2	4	1	8	2	1	3	3	—	—	—	—	24
*Trichinosis	13	—	1	—	1	—	—	—	—	—	—	—	15
Tuberculosis (pulmonary)	183	188	174	199	131	192	157	165	123	112	106	92	1,828
Tuberculosis (other forms)	11	14	6	21	12	6	10	11	7	5	9	8	120
Typhoid Fever	8	17	14	16	45	39	53	96	76	51	28	17	460
Typhus Fever	—	—	—	—	—	—	—	1	—	—	—	—	1
Whooping Cough	447	376	316	270	317	237	225	140	186	122	114	155	2,905
Yellow Fever	—	—	—	—	—	—	—	—	—	—	—	—	—
Gonorrhoea	106	100	122	135	80	55	83	67	80	90	66	41	1,025
Syphilis	197	185	324	246	222	180	199	200	158	235	167	192	2,505

*Made reportable Nov. 11, 1921.

Digitized by Google

Age Distribution of Diseases

The accompanying table will show the age distribution of cases of disease, as reported to the department during the year by health officers.

The degree to which ages were reported will be seen tc vary, but in most cases, 85 per cent. of the cases reported, gave the age of the patient. The ages of scarlet fever cases were given in over 97 per cent. of the cases.

It will be noticed that the predominating ages for scarlet fever, measles, and diphtheria are the ages 4, 5, and 6, with whooping cough at the ages of 2, 3, and 4 years.

Chickenpox and mumps, on the other hand, are apparently diseases that affect older children, the greater number of cases being 5, 6, and 7 years of age in the former, and 6, 7, and 8 in the latter disease.

Digitized by Google

AGE DISTRIBUTION OF CASES REPORTED IN 1921

Age in Years

Disease	Under 1	1	2	3	4	5	6	7	8	9	10-14	15-19	20-24	25-29	30-34	35-39	40-49	50-59	60 & over	Age not given	TOTALS
Anthrax	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebrospinal Men.	12	5	4	4	3	5	1	1	3	2	10	3	3	5	—	1	1	1	3	11	78
Chickenpox	85	67	117	131	159	241	344	256	154	101	225	42	26	9	8	4	5	2	—	196	2,272
Conjunctivitis Inf...	7	3	5	2	2	4	5	8	9	5	39	54	6	2	4	1	7	3	2	—	167
Diphtheria	61	100	176	288	263	294	306	246	211	186	518	159	127	109	61	38	54	21	10	133	3,361
Dysentery, amoebic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery, bacillary	5	2	—	—	—	—	1	1	1	—	1	—	—	—	1	—	—	—	3	1	16
Encephalitis, Epid...	1	1	2	2	3	2	2	1	3	3	5	7	2	5	5	5	4	5	9	9	74
Favus	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
German measles	2	5	8	4	4	7	10	4	1	7	12	8	3	2	—	—	2	—	—	17	96
Influenza	6	6	5	3	5	5	6	4	1	2	9	14	19	32	20	14	44	9	36	42	282
Leprosy	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1
Malaria	—	—	—	—	—	1	—	1	—	1	2	1	4	1	1	4	1	6	—	4	27
Measles	147	205	302	277	349	452	500	420	293	216	521	154	45	31	20	18	14	5	2	649	4,620
Mumps	9	22	45	66	82	142	217	225	187	145	448	148	66	49	48	26	31	10	5	323	2,294
Paratyphoid fever	1	1	4	6	8	1	2	—	2	1	4	1	2	2	2	—	1	—	—	10	48
Pneumonia, lobar	43	40	32	31	36	39	35	20	21	20	60	41	30	31	54	41	107	77	162	140	1,060
Poliomyelitis	9	10	13	9	3	1	3	1	1	1	4	4	2	1	2	—	1	—	1	20	86
Rabies	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet fever	37	64	169	264	311	374	414	346	303	256	795	213	129	74	63	30	32	12	14	101	4,001
Septic sore throat...	—	—	—	3	—	3	3	—	1	2	2	3	1	2	5	5	—	—	—	5	35
Smallpox	—	—	—	—	—	—	—	—	—	—	—	2	1	2	—	1	1	1	—	—	8
Tetanus	1	—	—	—	1	—	—	—	—	—	6	5	1	1	—	1	1	—	—	5	22
Trachoma	—	—	1	—	—	—	—	1	3	1	8	3	—	—	2	2	—	1	1	1	24
Trichinosis	—	—	—	—	—	—	—	—	—	—	1	2	2	1	1	—	1	2	—	5	15
Tuberculosis, pul...	3	—	7	1	—	4	8	5	6	11	114	135	232	256	204	165	223	122	74	258	1,828
Tuberculosis, other forms	11	11	7	10	5	3	7	2	7	2	7	8	6	6	8	1	6	4	1	8	120
Typhoid Fever	2	3	4	13	12	17	20	11	20	17	73	41	51	45	35	30	37	11	7	11	460
Whooping cough	249	226	290	291	299	278	284	242	125	79	137	14	8	4	7	6	3	—	3	360	2,905
Gonorrhoea	3	2	—	3	3	4	8	3	4	2	8	102	255	229	84	36	41	7	4	227	1,025
Syphilis	15	1	2	—	—	5	5	5	3	5	11	50	172	166	128	97	147	71	19	1,603	2,505

Digitized by Google

Epidemic Cerebrospinal Meningitis

With 78 cases reported during the year, this disease proved to be less prevalent in Connecticut than in 1920. Unfortunately 47 deaths occurred, a fatality rate of 60 per cent. In 1920 the fatality rate was 69%.

It is probable that the fatality rate will remain above 50% unless more of the cases are treated with the specific polyvalent serum for this disease. This serum is not kept on hand by all druggists in the state and is therefore not available when needed by physicians outside of the larger cities. One way to prevent the high proportion of deaths would be to distribute serum for treatment in a similar way as other biological products are distributed, to health officers by the Department. It is intended to do this in 1923 providing sufficient funds are available.

Cerebrospinal Meningitis is a disease that should receive treatment promptly, for death follows in the fatal cases, within a few days after the onset of the symptoms. Prompt reporting of these cases is exceedingly important in order that health officers can institute all necessary precautions and quarantine to prevent the disease from becoming epidemic.

EPIDEMIC CEREBROSPINAL MENINGITIS

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	312	188	23.0	13.9	60.3
1918	1,409,530	117	77	8.3	5.5	65.8
1919	1,464,360	44	45	3.0	3.1	100.0
1920	1,393,292	91	63	6.5	4.5	69.2
1921	1,420,576	78	47	5.5	3.3	60.3

Chickenpox

The 2272 cases of chickenpox reported exceeds by far the total cases reported during any previous year for this disease. It was made a reportable disease in 1916. The reporting is particularly important as it may be mistaken for mild smallpox.

Each case of chickenpox in adults, is investigated by certain health officers in the state to confirm the diagnosis. The reporting of the disease was of great importance in the smallpox outbreak that started in December in Bridgeport.

During the year cases of severe chickenpox, simulating smallpox, were investigated in co-operation with the local health officers in Cromwell, New Canaan, Simsbury, Windsor Locks, and Bristol.

Digitized by Google

Conjunctivitis (Infectious)

The importance of the reporting of infectious conjunctivitis lies in the cases that occur in infants who may be rendered blind unless the infection is properly and promptly treated. These cases in the newborn are referred to as ophthalmia neonatorum.

Incidentally, epidemics of the epidemic conjunctivitis—or "pink eye" so called—were checked. These were reported from Old Lyme and Watertown where outbreaks of 33 cases and 59 cases occurred respectively among the school children.

Diphtheria

The campaign to reduce the prevalence of diphtheria and its fatality rate has shown encouraging results.

In 1916, five years ago, 10 per cent. of the diphtheria cases reported were fatal in Connecticut. In 1921, there were 3,361 cases and 176 deaths reported, resulting in the fatality rate of 5.2 per cent. the lowest fatality rate for diphtheria of any eastern state.

Diphtheria is unlike other of the infectious diseases, in that its highest seasonal incidence is in the late fall and early winter months. Scarlet fever, measles, encephalitis and most respiratory diseases reach their highest incidence in the late winter and spring months.

Diphtheria was most prevalent in Hartford and Fairfield Counties at the beginning of the year. In March, Tolland County had the highest case rate and in May, New Haven County was highest. During the last four months of the year it appeared in Windham County which had the highest case rate during September, October and December.

The 176 deaths during the year is the lowest yearly total that the state has had for any year for which we have records since 1876. In that year there were 165 deaths in the state, which had a population of 588,598 at that time, giving a mortality rate of 28.0 deaths per 100,000 population as compared with the rate of 12.4 for 1921.

This demonstrates the value of free diphtheria antitoxin distributed by this Department to all health officers in the state, from whom physicians can draw their supply as it is needed.

The educational campaign to institute the early treatment of diphtheria cases and to administer diphtheria an-

Digitized by Google

titoxin in sufficient amounts, has served in part to bring about this extraordinary reduction in diphtheria mentioned above.

Thousands of diphtheria leaflets have been distributed to school children through the local health officers and school authorities, urging people to call physicians early when children are ill with a sore throat.

Prompt administration of antitoxin in suspected cases of diphtheria, and to other members of a family in which a diphtheria case exists without waiting for a confirmatory report from the laboratory examination of the swab from the nose and throat, have assisted in attaining this low fatality and mortality rate for diphtheria.

Physicians, health officers, laboratories, and public health nurses assisted greatly in keeping the diphtheria cases at a low number, by taking nose and throat swabs from members of the family, school children, teachers and others in contact with a diphtheria case. This work disclosed many persons who were carriers of the diphtheria germs who were then quarantined before they could infect others, thus preventing a further spread of diphtheria in the community.

Factors that were responsible for the lowest diphtheria mortality rate that Connecticut has ever known were also responsible for the lowest case fatality rate in the history of the state. The major factors were:

1. Prompt reporting of all diphtheria cases by physicians, hospitals and other professional attendants.
2. Administration of diphtheria antitoxin by physicians at once to persons suspected of having diphtheria, without waiting for a laboratory report on the swabs taken from the nose and throat.
3. Local health officers have urged all parents to have a physiciar in cases of sore throats, so that the prompt and specific treatment by a physician would be instituted immediately.
4. Administration of antitoxin in a large "first dose," rather than several small ones at intervals.
5. Intravenous administration of antitoxin in severe cases. Several remarkable results have been attained in the state by giving antitoxin intravenously. Care should be taken to warm antitoxin to body temperature before giving intravenously.
6. Careful quarantine and isolation of diphtheria cases, "contacts" and diphtheria bacilli carriers until negative reports have been received from at least two nose and throat swabs from each case and carrier, and at least two negative reports from each person in close contact with the case.
7. Administration of the immunization dose of 1,000 units of diphtheria antitoxin to each person in direct contact with a case of diphtheria.

Digitized by Google

DIPHTHERIA

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	2,367	234	174.7	17.3	9.9
1918	1,409,530	2,348	201	166.6	14.3	8.6
1919	1,464,360	3,388	253	231.4	17.3	7.5
1920	1,393,292	3,754	235	269.4	16.9	6.3
1921	1,420,576	3,361	176	236.6	12.4	5.2

DIPHTHERIA—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (per 100,000)
Fairfield	332,619	816	245.3
Hartford	349,290	976	279.4
Litchfield	77,189	96	124.4
Middlesex	46,691	59	126.4
New Haven	427,255	1078	252.3
New London	106,675	179	167.8
Tolland	27,333	44	161.0
Windham	53,504	113	211.2

Dysentery

There were 16 cases of bacillary dysentery reported, a very small number for Connecticut in the opinion of many physicians. It seems probable that as laboratories are used more in making correct diagnoses of gastro-intestinal diseases, bacillary dysentery will be found to exist much more than is recognized at present.

Following an outbreak of dysentery totaling over twenty cases during July 30, 31 and August 1 in Portchester, N. Y., on the F. milk route, an investigation by the local health officer in co-operation with the department disclosed two cases of severe diarrhoea on the B. farm in Litchfield, Conn. This farm was one of the 9 farms in the vicinity of Litchfield contributing milk to the F. route. The milk was not pasteurized before shipping or by the F. distributing plant in Portchester.

Epidemic Encephalitis

The first cases of epidemic encephalitis, popularly called "sleeping sickness," were reported in Connecticut in 1919 and there were 40 cases in 1920. In 1921, 74 cases were reported by physicians of which 33 died, giving a fatality rate of 43 per cent. This is higher than the real rate, for many mild cases were not reported, as physicians were

Digitized by Google

simply requested to report the cases early in the year. It was made a reportable disease on November 11, 1921, by the Public Health Council.

Information was collected on cases by using uniform epidemiological questionnaires.

A summary of this information is given:

SYMPTOMS PRESENT IN 44 CASES

Fever	33 Cases	Ptosis	15 Cases
Headache	33 "	Vomiting	18 "
Difficult Swallowing	21 "	Mental Condition Affected	19 "
Tremors	20 "	Nausea	16 "
Malaise	27 "	Chills	10 "
Stiff neck	20 "	Change in vision	11 "
Restlessness	26 "	Photophobia	9 "
Irritability	19 "	Paralysis of parts of the body	8 "
Diplopia	18 "	Duration of lethargy	1 - 63 days
Delirium	18 "		

The outcome of these 44 cases was as follows:

Died	19
Recovered	20
Uncertain	4
Paralyzed	1

The sex distribution of the cases was practically equal,—35 cases among females and 38 among males. The age distribution is given on page 123.

There were 35 cases classified as Americans and 22 other cases giving their country of birth were distributed among 12 nationalities.

The time of lethargy varied from 1 day to 49 days after the apparent onset of the disease. Twenty-six cases gave information on this symptom, three of which stated no lethargy to be present. The remaining 23 cases were as follows:

No. of Cases	Days After Onset Before Lethargy Appeared
3 Cases	Appeared at onset.
4 "	1 day after
3 "	2 days "
2 "	3 " "
3 "	4 " "
3 "	5 " "
2 "	7 " "
2 "	10 " "
1 "	11 " "
1 "	13 " "
1 "	14 " "
1 "	15 " "
1 "	21 " "
26 "	

Digitized by Google

The duration of the lethargy varied from its entire absence to 7 weeks. On 28 case records, the duration was as follows:

Number of Cases	Duration	Number of Cases	Duration
3	None	1	12 days
2	1 day	2	16 days
1	3 days	4	21 days
1	4 "	1	26 days
2	5 "	1	30 days
3	8 "	1	35 days
1	9 "	1	49 days
3	10 "	1	63 days
	Total	28 cases	

German Measles

There were 94 cases of this mild disease reported. This disease appears in epidemics at times and the last one occurred in Connecticut in 1918. It is usually attended by no fatalities.

Influenza

A total of 282 cases were reported during the year. There were 193 deaths, which would give a fatality rate of 68 per cent. This per cent. of fatal cases is much too high and undoubtedly indicates that many cases were mild and had no physician in attendance or were unrecognized as influenza and were never reported.

Numerous cases of "grippe" exist each year that have many, if not all, of the symptoms of a mild influenza. Unfortunately, the majority of these cases are not reported, making the statistics of this disease inaccurate at present.

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1918	1,409,530	105,056	7,602	7,453.3	539.3	7.2
1919	1,464,360	10,664	1,583	728.3	108.1	14.8
1920	1,393,292	23,931	1,254	1,717.6	90.0	5.2
1921	1,429,576	282	193	19.9	13.6	68.4

Leprosy

One case of leprosy of the anaesthetic type was reported by Waterbury. This patient was a native of Vendau, Russia (about fifteen miles from Libau, Latvia, Russia). She had come to this country in 1904 and had lived in New York City prior to her arrival in Waterbury, five years ago. She was taken to New York City by her relatives. Leprosy is common in the Libau area.

Digitized by Google

A leprosy case, T. H., admitted to the Bridgeport Hospital in June, 1918, was transferred in March to the National Leprosarium at Carville, Louisiana.

There are no known lepers now in the state.

Malaria

Health officers were again asked during the year to investigate all suspected cases of malaria in order to obtain an exact idea of the incidence of this disease and those areas in which there may be persons who are carriers of the causative agent of malaria. Despite the watchfulness of health officers, there was no marked increase in the number of cases of malaria reported over the previous year, 27 cases being reported as compared with 22 cases reported in 1920. There were 2 deaths during the year as compared with 3 deaths in 1920.

The 27 cases during the year were reported from the following communities:

East Lyme	1
Greenwich	11
Hartford	1
New Britain	4
Norwalk	1
Rocky Hill	6
Waterbury	1
Westport	2
	27

Measles

Aside from a local outbreak of measles in Hartford and Middlesex Counties, in the late winter and spring, measles was not epidemic in 1921. In January measles was quite prevalent in Hartford and Middlesex Counties and during the first six months of the year appeared in the Fairfield and Litchfield Counties. During July and August cases were reported in Windham and Tolland Counties where it became quite prevalent in October and November respectively.

The mortality rate in 1921 was the lowest the state has ever known and the fatality rate was remarkably low, being only nine-tenths of one per cent. (0.9%).

The most common ages of measles cases in Connecticut are from 2 to 8 years of age. Over half of all the measles cases are in this age group. The most common ages for persons to die of measles are during the first two years of life,—in fact, over half of the persons who die of

Digitized by Google

measles are less than 2 years old. This means that any measure we can take to prevent children less than two years of age from catching measles will give them a better chance of recovery. This is true also of children two, three, and four years old. Approximately 75 per cent. of children dying of measles are less than three years old and 80 per cent. are less than 9 years old.

A child five years old or more has a much better chance of recovery than younger children.

MEASLES

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	7,462	126	550.7	9.3	1.7
1918	1,409,530	5,450	87	386.7	6.2	1.6
1919	1,464,360	5,884	100	401.8	6.8	1.7
1920	1,393,292	8,425	137	604.7	9.8	1.6
1921	1,420,576	4,620	43	325.2	3.0	0.9

MEASLES—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate
Fairfield	332,619	752	226.1
Hartford	349,290	1460	418.0
Litchfield	77,189	543	703.5
Middlesex	46,691	291	623.2
New Haven	427,255	520	121.7
New London	106,675	185	173.4
Tolland	27,333	431	1576.8
Windham	53,504	438	818.6

Mumps

With 2,294 cases of mumps, the total cases for the year exceeded in number the cases reported for any preceding year. The reporting of this disease is of too recent an origin to estimate the severity of the suggested epidemic of this painful disease, but that it was more prevalent than the average year seems probable.

Paratyphoid Fever

It is practically impossible to diagnose paratyphoid fever without a blood culture test, Widal examination, or isolation of the paratyphoid bacilli from the body discharges. Of the 48 cases reported during the year, 27 were reported in Hartford, 2 cases in West Hartford, and 2 cases in Simsbury. They were a part of the epidemic of typhoid and paratyphoid apparently caused by ice cream.

For details of the epidemic, see the Hartford typhoid fever epidemic.

Digitized by Google

Plague

Because of the spread of plague in the southern states and particularly its appearance inland, a brief survey of the possibilities of the spread of bubonic plague into Connecticut was made by P. A. Surgeon Louis Williams of the U. S. P. H. Service.

The Commissioner, Dr. John T. Black, visited the plague-stricken areas in Texas and later was present at several conferences in the state and at the Boston Chamber of Commerce which investigated the possibilities of a plague invasion of Connecticut and New England.

Dr. Williams submitted the following report:

Preliminary Report on Possibility of Plague Infection on the Connecticut Coast

The general factors concerned in the spread of bubonic plague, the method of its transmission and the proposed measures of a prophylactic nature are taken up in a broad discussion in the attached report headed "The Relation of Bubonic Plague to Ports of New England." The facts and conclusions therein found will, therefore, not be reiterated.

This preliminary report is based on brief visits to the following ports of the State of Connecticut: Stonington, Mystic, Noank, New London, Saybrook, New Haven, Bridgeport, Norwalk and Stamford. None of the more inland ports, that is, those found up rivers, are herein considered.

The ports of primary importance are New London, New Haven and Bridgeport, these ports receiving the majority of foreign shipping and boats from the Gulf of Mexico. However the smaller ports must be taken into consideration because they are largely used by barges from the other Connecticut ports as well as from our larger Atlantic ports and by means of these barges a considerable importation of rats takes place.

Stonington, Mystic and Saybrook to all intents and purposes might be termed dead ports. Their harbors are largely filled up, most of the wharves are total ruins, and the only apparent shipping is that of very small boats.

At New London is found the large State Pier in excellent condition as far as rat infestation is concerned. However there are other large docks for trans-Atlantic boats in very poor condition. Many coal docks and a few small boat docks are found along the extremely congested waterfront.

Digitized by Google

This waterfront is in very bad shape as the dockage is all of old, (much of it dilapidated) wooden type with wooden superstructures. In close proximity to the docks, are found many machine shops surrounded with a great deal of litter, packing plants and food stores offering abundant food supply. These conditions supply excellent nesting facilities and a plenteous food supply to a large rat population.

The waterfront of New Haven is divided. There is sparse dockage with scattered buildings on the East Haven side. Up the Quinnipiac River are a few coal piers with buildings built sparsely along the waterfront. From Tomlinson Bridge west are found many old docks along Water Street, many of these for coal, some for lumber and some general merchandise docks. The waterfront in this area is very congested, comprised largely of meat packing plants, factories, machine shops and large railroad freight yards.

Bridgeport has an excellent harbor, but does not show much signs of shipping at the present time. There are a few coal docks and small shipping docks in constant use. The large Locomobile pier seems to be in very good shape though it is not used to any great extent. Other than these are found many dilapidated dock structures for the most part offering excellent rat harborage with abundant food supply of easy access in close proximity. The waterfront condition is very poor.

Norwalk shows a few coal and oyster docks with two or three lumber piers. Other than the shipping that these bring, there is very little trade on the waterfront. Rat harborage is fair, and during the oyster season the food supply is abundant.

Stamford shows very slight shipping at the present time. All is confined to the point between Mill River and the canal and mostly on the canal side. Here is found one large oil pier, and a few barge and small boat docks. The waterfront is not very congested and though the rat harborage is good, there is no very abundant food supply very close.

Although the Connecticut ports show no regular lines of shipping to European or South American ports still it must be borne in mind that quite a number of Tramp vessels are constantly using the Connecticut ports irregularly and these Connecticut ports have no national quarantine stations. Due to the entrance of these Tramps from a variety of different foreign ports, and the barge interchange of rats

Digitized by Google

from ports on the Atlantic seaboard, then it is reasonable to suppose that it is only a question of time before the rats of Connecticut pick up the infection that may be among the rats of other seaports in this as well as foreign countries.

Savannah, Georgia and Charleston, South Carolina, have both carried out effective rat surveys. Philadelphia and New York City have set aside sums of money with which to make rat surveys. The State of Massachusetts has appropriated a sum of money with which to commence a study of possible infection among the rodents of the seaport towns of Massachusetts and is contemplating additional appropriation. In co-operation with the Massachusetts Department of Public Health this work has already commenced in Boston. The matter is now under consideration in Maine and in Rhode Island.

For the purpose of determining whether plague be present among the rats at this time a rat survey is essential. Unless this is done the presence of plague will not be discovered until human cases commence to appear and be recognized. In this event all the rigorous enforcements of a drastic quarantine and the enormous cost of emergency plague prevention work would descend immediately. These difficulties can only be surmounted by the discovery of plague infection while it is still confined to the rat population. At the termination of such a survey the local health department of each port should carry on a continuous rat catch if the survey be negative in order that the infection may be picked up immediately after its introduction.

It has been estimated that there is one rat for each inhabitant of a city. Hence a city of 30,000 inhabitants would be considered as having a rat population of 30,000. From the conditions seen in the preliminary survey it is estimated that by far the vast majority of the rat population of the seaports of Connecticut are to be found on the waterfront.

During some epidemics the number of infected rats has at times been as high as one-half of the total rat catch, 50%. However at other places and after the acute epidemic was over (a condition which may be compared to the "commencement" of an epidemic) the infected rodents sometimes fall to as low as $\frac{1}{10}$ of 1% or less. Considering this last observation then it is reasonable to suppose that there may be plague present among the rats but to such a small extent that only one rat in a thousand is infected. The laws of chance would easily excuse failure to find this one in a thousand unless quite a few thousand rats were caught and examined. In a rat survey certainly no less than one thous-

Digitized by Google

and rats should be examined, preferably at least four or five thousand even in a city containing less than one hundred thousand rats. Perhaps it may be better to use as a basis a unit of waterfront, that is a miscellaneous waterfront containing large docks, barge docks and the usual type of the average waterfront structure. From rat surveys carried on in other places in the past basing an estimate on the number of rats caught at the time that those in charge of the work were in the conclusion that a sufficient survey had been made and which conclusion was proven presumably correct by the results of further work, then it seems reasonable to use those figures as a basis. This comes to about one thousand rats to a mile of waterfront. This figure unfortunately cannot be based on definite statistics, and is only approximate, it may be entirely too low, however it seems to be a reasonable number.

All rats caught, and they should by preference be caught in a trap in order that their exact location may be ascertained, and sent to an epidemiological laboratory where they could be examined as fresh as possible by one who is familiar with the aspects of plague in rats. This could best be done by sending a laboratory man to the United States Public Health Service plague laboratory at New Orleans, Louisiana, where facilites are always present for training in the diagnosis of rat plague. Two or three weeks in this laboratory should be sufficient. All rats caught should be shipped to one laboratory thus making the examination most economical.

One field man should be trained in the proper method of trapping rats. This could be done at any of the present plague infected ports of the Gulf coast or at any of the Atlantic seaboard cities where rat surveys are now being conducted by trained rat catchers.

It has been found in other places that an estimate of cost can be made on the number of rats caught and examined at the rate of about 70 cents per rat. This includes salaries and transportation and all other expenses for both trapping and laboratory examination of rats. A city with a population of 100,000, expecting to catch and examine 10,000 rats, should be prepared to spend $7,000 therefor.

The best possible time to make an initial rat survey in our more northern ports is winter. During the winter the rat flea which is the means of conveying the infection from

Digitized by Google

rat to rat as well as from rat to man, is in a state of hibernation. Also in our northern climates rats do not breed as fast in the winter as in the summer.

It is recommended that what legislation be proposed regarding ratproofing of buildings be confined to new buildings and heavily remodelled buildings. Rat-proofing legislation should be entirely separate and apart from the rat survey.

It is recommended that the State Department of Health of Connecticut should take the following steps: (1) train a laboratory man in the bacteriological diagnosis of plague in rats; (2) train a rat catching foreman or secure one so trained; (3) urge rat-proofing legislation for new buildings and for remodelled buildings in all seaports; (4) secure state or local appropriations with which to conduct rat surveys in every seaport in the state; (5) recommend that the state or each seaport enforce the docking requirements designed to limit the transference of rats from boats to docks, that is the bresting off of at least four feet from the dock of all boats and the placing of rat guards on all hawsers; (6) recommend for each seaport in which is conducted the survey that a continuous rat catch, though of lesser degree, be maintained in perpetuity on the waterfront; (7) equip and maintain a laboratory for the examination of rats to which shall be sent all rats caught in the state.

Summary: It seems probable considering the extension of plague throughout the world in the last twenty-seven years that the Atlantic seaboard is due to receive the infection if it is not already present. That although the national government takes all measures possible to prevent the introduction of plague, such national measures cannot always be entirely effective. Although we cannot without an undue disturbance of commerce by sea prevent the introduction of plague infected rodents, we can be prepared to eradicate such infection and prevent an epidemic among human beings.

For this purpose it is necessary to carry on an effective rat survey with examination of all rodents caught and to continue such work for all times.

Respectfully,

LOUIS L. WILLIAMS, JR.

P. A. Surgeon, U. S. P. H. S.

Digitized by Google

Pneumonia (Lobar)

With 1060 cases of lobar pneumonia reported, 60 per cent of which were fatal, it is at once apparent that the toll of lives taken by this disease exceeds all other communicable diseases except tuberculosis.

The bacterial cause of lobar pneumonia has been divided into four groups or types of organisms, called type I to IV pneumococci.

The cases of pneumonia due to these pneumococci cause fatalities as follows:

	Types Causing Lobar Pneumonia	Per cent. of cases that die	
Type I	33.*	28*	25**
II	34.	30	32
III	13.	60	45
IV	20.	25	16
	*Reported by Cole		**Reported by Avery

For several years the cases of pneumonia caused by the type I pneumococcus have been successfully treated with a serum reducing the fatality rate from 25.0 per cent. to less than 10 per cent.

In order to know which cases need the serum it is necessary to have a laboratory available for determining whether the pneumonia is caused by the type I pneumococcus. This involves the use of special equipment for the bacteriological diagnosis. The cost of such work, however, has proved small compared with the lives saved, wherever it has been instituted.

The rapidity with which pneumonia develops is such that a laboratory is of service in such work, to only those physicians who can send specimens of mucus coughed up from the lungs, by messenger to the laboratory, as haste in diagnosis, followed by the prompt administration of the specific serum is essential to successful treatment.

It is recommended that work be instituted along the line of diagnosis of type I pneumonia cases wherever it is possible to do so.

Poliomyelitis

Poliomyelitis, or "infantile paralysis," was more common during 1921 than any year since the 1916 epidemic, when it was widespread in eastern United States. This disease was epidemic during the year in the adjoining state of New York where 565 cases occurred, centering in Utica, N. Y., 88 cases occurring in that city alone.

Digitized by Google

The disease predominated in the male group, 52 of the cases being males and 31 females. The age distribution is given on page 123.

A study of the nationality of the cases showed the majority to be native-born children:

American	42	Irish	2	Czecho-Slovakian	1
Italian	9	Swedish	1	German	1
Polish	5	Portugese	1	Lithuanian	1
Russian	5	Austrian	1		
French	3	Hungarian	1		

The residence of the cases were reported as being in the city in 52 instances; in villages, 9 cases; and in the country, 11 cases.

The status of the family in which the cases occurred was stated in 6 cases to be well-to-do; in 34 cases to be of moderate circumstances; and 17 cases to be in poor families.

The sanitary conditions of the homes of the patients were stated as 44 equipped with flush closet and sewers, 5 with cesspools, and 10 with privies.

The health of the patient prior to the attack was excellent in 26 cases, good in 23 cases, fair in 3, and 2 were in poor health.

In the families of the cases were a total of 131 adults and 178 children.

Certain symptoms were recorded on the blanks for 61 cases as being present and are given in the table below:

Symptoms Present

Fever	57 cases	Constipation	26 cases
Pain	36 "	Drowsiness	24 "
Restlessness	34 "	Retraction of head	19 "
Headache	29 "	Vomiting	14 "
Tenderness	28 "	Diarrhoea	5 "
Stiff neck	2 "	Sore Throat	5 "

The distribution of the paralysis was given in 53 cases, as follows:

Distribution of Paralysis

Entire body	1	Right arm and leg	5
Respiratory centers	2	Left arm and leg	2
Cervical muscles	1	Whole right side	1
Both legs	12	Whole left side	2
Both legs and arms	3	Legs, arms, face	1
Right leg	7	Both legs, right arm	1
Left leg	6	Right facial	1
Right arm	2	Left facial	1
Legs and back	2	Fingers	1
		Left arm	1

Digitized by Google

Only 3 cases were in homes where animals had been sick. Each of the 3 cases, in different communities, were associated with a paralyzed cat.

There were 22 cases in families keeping animals such as cats, horses, dogs, rabbits, and hens. There were 36 cases in families keeping no animals. The other 27 cases lack information on this point.

Measles and mumps existed in the same family or playmates in 2 cases only. No other diseases were associated with the cases. Four cases were associated with previous cases, two being members of the same family, and 2 being playmates.

The fatality rate of poliomyelitis, 29.1 per cent., is a good indication that the disease was well reported by physicians during the year.

POLIOMYELITIS

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	29	16	2.1	1.2	55.2
1918	1,409,530	51	16	3.6	1.1	31.4
1919	1,464,360	12	10	0.8	0.7	83.3
1920	1,393,292	41	23	2.9	1.7	56.1
1921	1,420,576	86	25	6.1	1.8	29.1

Rabies

No human cases of rabies were reported during the year. The State Commissioner of Domestic Animals reported 21 cases in dogs in the following towns during 1921 which indicates the incidence of the disease and the territory in which it prevailed during the year:

January	Mystic	1
March	Griswold	6
June	Brooklyn	1
July	Montville	1
August	Brooklyn	1
	Norwich	3
September	Montville	1
November	Cromwell	1
	Middletown	1
December	Portland	4
	Naugatuck	1
		21

Digitized by Google

All persons bitten by the rabid animals were urged by physicians and health officers to be immunized by the administration of the Pasteur treatment, with such good results that none of the bitten persons developed rabies.

Arrangements were made whereby treatments ordered through health officers would be at a reduced price. It was felt that Anti-rabic Vaccine prepared by the Harris method had three advantages over the other forms of the Pasteur Treatment:

1. It required only 14 days instead of 21 days.
2. No cases of paralysis have followed the treatment.
3. Less discomfort to the patient because of shorter treatment.

Scarlet Fever

Scarlet fever cases totaled 4,001, practically equalling the 1920 total of 4,028 cases. This disease increased in virulence compared with 1920, for 2.5 per cent. of the cases died compared with 1.8 per cent. in 1920. Incidentally, the mortality rate, which was 1.5 deaths per 100,000 population has increased each year to 7.2 for the present year.

In the first quarter of the year, scarlet fever was most prevalent in New Haven, Hartford and Litchfield Counties, but during April, May and June, the highest incidence was in Fairfield County. During the last three months, the highest case rates were in Tolland and Windham Counties.

An effort was made to acquaint the people by distribution of pamphlets with the seriousness of the disease and how to prevent its spread. There were 33,000 pamphlets distributed during the year.

The innumerable mild cases of scarlet fever that exist in a community when this disease is present prove to be a difficulty for health officers that is well nigh insurmountable. These mild cases hitherto have not been reported as many did not have a physician in attendance and were therefore not reported.

The health officer does not know of the existence of these unreported mild scarlet fever cases, which unfortunately infect other children, unless they attend school and are brought to his attention by the school authorities. When these latter cases are reported, the health officer, in seeking their source, discovers the previous unreported mild cases.

It has proved difficult for health officers to educate parents up to the point of realizing the danger of a mild case of scarlet fever. A case lasting but a few days should be quarantined and isolated as are severe cases, for it is a real menace to the community and can infect others. It is very

Digitized by Google

hard to "put across" the message that mild cases of scarlet fever infect others and that fatal cases may follow. More education of parents along these lines is needed by written leaflets, personal visits by health officers, and the careful and thorough advice by attending physicians.

SCARLET FEVER

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	1,528	21	112.8	1.5	1.4
1918	1,409,530	1,550	36	109.9	2.6	2.3
1919	1,464,360	2,663	46	181.9	3.1	1.7
1920	1,393,292	4,028	74	289.1	5.3	1.8
1921	1,420,576	4,001	102	281.6	7.2	2.5

SCARLET FEVER—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (per 100,000)
Fairfield	332,619	949	285.3
Hartford	349,290	607	173.8
Litchfield	77,189	346	448.3
Middlesex	46,691	93	199.2
New Haven	427,255	1604	375.4
New London	106,675	213	199.7
Tolland	27,333	51	186.6
Windham	53,504	138	257.9

Septic Sore Throat

There were 35 isolated cases of septic sore throat reported from fourteen communities. In no case was a milk supply involved or any other common source of infection found.

Smallpox

Eight smallpox cases were reported from the following places:

Town or city	Ages (Years)	Vaccinated	Not Vaccinated	Total Cases
Bethel	20, 48	0	2	2
Manchester	25	0	1	1
Bridgeport	16, 19, 29, 47, 54	0	5	5
		0	8 cases	8 cases

Digitized by Google

It is indeed fortunate that so few cases were reported, for it has enabled health officers to devote more time to other diseases, and accomplish much in decreasing disease conditions in their respective communities and collectively for the state.

New York State had 602 cases during the year. The cases in Connecticut were found to have the following sources:

Source of 1921 Smallpox Cases in Connecticut

Town or City	Cases	Source of Infection
Bethel	1 case	Contact with case in Fargo, North Dakota.
	1 case	Contact with case in New York City.
Manchester	1 case	Infected in Detroit, Michigan.
Bridgeport	2 cases	Unknown origin.
	3 cases	Apparently from infected colored people from southern United States. These three cases were the beginning of the 1921-22 epidemic.

The case in Manchester, which was infected in Detroit, went to Providence, R. I., before arriving in Manchester. He was taken ill in Providence and saw a physician but left the city before diagnosis was made. The Providence Department of Health, suspecting smallpox and learning of his destination, notified this department by telephone and Dr. Moore, the Manchester Health Officer was notified at once. The prompt notification enabled Dr. Moore to have the patient under quarantine in fifteen minutes after he arrived in Manchester and before the arrival of the physician called by the patient.

SMALLPOX

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	423	1	31.2	0.1	0.2
1918	1,409,530	94	—	6.7	—	—
1919	1,464,360	6	—	0.4	—	—
1920	1,393,292	2	—	0.1	—	—
1921	1,420,576	8	—	0.6	—	—

Trachoma

Twenty-four cases of trachoma were reported during 1921. Trachoma up to comparatively recent times was not reported in northern states, but in recent years is becoming

Digitized by Google

recognized more often, particularly in the cities where hospitals conduct clinics for the treatment of eye diseases.

It is a very infectious disease and spreads through families by the common use of towels, wash cloths, and other means, such as bed clothing, where material from the sore eye is transferred to the eyes of others.

Trachoma begins with a slight redness of the eyes accompanied with a watery discharge and rapidly affects the eyelid and eyeball, causing a diminution of, or entire loss of vision. There is but little pain at the start and if promptly treated it may be cured.

The twenty-four cases were reported from:

New Haven	17	Stamford	1
Bridgeport	5	Fairfield	1

Tetanus

Tetanus, or lock-jaw, is a disease claiming an unnecessarily high fatality rate considering that we have means of prophylaxis for all persons receiving wounds, and a serum for treating cases.

There were 22 cases and 17 deaths from tetanus in 1921. Of these, 9 cases and 9 deaths were in July. Over half of the deaths from tetanus occurred in July, practically all of which were the aftermath of wounds received from explosions of cartridges, fire-crackers and other fire-works used in celebrating the Fourth of July.

In recent years, the number of cases of tetanus following injuries has decreased remarkably due to the prompt administration of the prophylactic dose of tetanus antitoxin immediately after the wound is received. To be of value in preventing tetanus, the prophylactic dose of antitoxin must be given before the symptoms appear. The prevention of tetanus is decidedly better than waiting to treat the disease after it develops, for some of the cases prove fatal despite all efforts in treatment.

How Accidents Caused Certain July Cases

CASE 1. A small boy on July 4, 1921 was wounded by a cartridge explosion, and dirt on his hands was carried into the flesh of the wound. The dirt carried in contained tetanus germs, which caused tetanus to develop. A physician was not called by the family until the disease developed on July 8th.

CASE 2. A boy had his left hand severely burned by powder from fire-works on July 2nd, but a physician was not called until symptoms developed on July 10th.

CASE 3. A boy was burned on a finger of the right hand by an exploding fire-cracker. No physician was called until the disease developed on July 10th.

Digitized by Google

CASE 4. A woman was wounded by a blank cartridge which was discharged into her hand when she tried to take a revolver from her son. The wadding penetrated into her hand carrying dirt with it, with the result that the patient developed tetanus and died.

CASE 5. Wound made by a blank cartridge fired from a revolver. No physician was called until symptoms of disease developed.

The remaining cases were caused in similar ways.

Method of Infection in Tetanus Cases

The germs causing tetanus are found in ordinary animal manure, particularly from horses, and are thus present in street dust and dirt. Tetanus germs develop into spores— a very resistant form of germ life—which resist drying and sunlight. For this reason, dry dust that may be on the hand when the hand is punctured by fire-works may contain the tetanus spores and may be carried into the wound made by the fire-works. Tetanus germs live best where air cannot reach them so that deep or penetrating wounds are particularly dangerous, such as those made by nails, fish hooks, wood splinters, blank cartridges, etc.

Treatment

To be on the safe side and to be sure that the person who is injured has been given the best treatment, a physician should be called when persons are injured by fireworks in order that he may furnish the best treatment for the case and administer the prophylactic dose of tetanus antitoxin, if the nature of the wound demands it. Tetanus antitoxin for prophylactic use is administered subcutaneously. Tetanus antitoxin for treatment of tetanus cases should be given intraspinally.

Free Distribution of Tetanus Antitoxin

Tetanus antitoxin in the prophylactic dose (1500 units) and in the treatment dose (5000 units) is supplied free to citizens of Connecticut by the State Department of Health through the physicians, who obtain it from any of the local health officers on demand.

Trichinosis

Fifteen cases of trichinosis occurred in the state, one of the cases being fatal. This disease is contracted by eating meat from hogs who had the disease. It is a painful affliction and any movement of the extremities is accompanied

Digitized by Google

with pain due to the cysts of the larvae causing the disease.

The cases occurred in two outbreaks in Manchester and Norwich.

In addition isolated cases were reported from

Waterbury (one case)
Colchester (one case)

Investigation by the local health officers of these towns gave the following interesting histories of these cases:

Colchester— Case reported April 21, 1921. Patient ate uncooked ham. Symptoms followed of swelling of eyelids, swelling of face, fever (continuous of typhoid type), weakness, prostration, rapid irregular pulse, constipation, slight cough, stiffness and soreness of joints. Eosinophilia present. No examination of pork made. Patient recovered.

Norwich— Four cases reported Jan. 8, 1921. Fresh pork eaten by four cases in same family. Samples of pork were sent to Washington for analysis and trichinella were found.

Waterbury— Case reported in February. Raw sausage eaten. Eosinophilia present, 1st examination 20%; 2nd examination, 20%; 3rd examination 4%. Diagnosis made too late for examination of meat. Fatal case.

Manchester—Eleven cases reported during January. No food was obtained for laboratory examination. Five of the cases had eaten sausage bought at the same store. The food causing the other cases was not definitely determined.

Tuberculosis

The 1828 cases of pulmonary tuberculosis reported during the year was the largest number reported since 1916. with the exception of last year, when 1905 cases were reported to health officers in the state. It is apparent that tuberculosis of the lungs is being more completely reported than formerly.

This means cases can be more carefully followed up by health officers, physicians, public health nurses and other health agencies to be sure that the individual case is following out the proper treatment to insure a cure, and also taking care not to infect others in his family or with whom he may associate.

The deaths numbered 1186, the smallest number since 1874 (1153 deaths). This would seem to confirm the above opinion, held by many, that this disease is on a permanent decline.

Digitized by Google

There were 120 cases of "other forms" of tuberculosis reported, distributed as follows:

Tuberculosis of Bone (Hip, joint, finger, thigh)	21
Tuberculosis of Brain	40
Tuberculosis of Lymphatic System	21
Tuberculosis of Peritoneum	8
Tuberculosis of Spine	7
Tuberculosis of Kidney	4
Tuberculosis of Eyes	2
Tuberculosis of Intestines	6
Tuberculosis of Larynx	4
Tuberculosis Miliary (generalized)	2

More intensive work in educating the "stay-at-home" tuberculosis case is necessary to prevent the spread of pulmonary tuberculosis, particularly to other members of the family.

TUBERCULOSIS—PULMONARY

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	1,795	1,752	132.5	129.3	97.6
1918	1,409,530	1,821	1,776	129.2	126.0	97.5
1919	1,464,360	1,640	1,485	112.0	101.4	90.5
1920	1,393,292	1,905	1,441	136.7	103.4	75.6
1921	1,420,576	1,828	1,186	128.7	83.5	64.9

TUBERCULOSIS (OTHER FORMS)—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (per 100,000)
Fairfield	332,619	22	6.6
Hartford	349,290	32	9.2
Litchfield	77,189	1	1.3
Middlesex	46,691	—	—
New Haven	427,255	57	13.3
New London	106,675	4	3.7
Tolland	27,333	1	3.7
Windham	53,504	3	5.6

TUBERCULOSIS—ALL FORMS

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	1,795*	2,078	132.5	153.4	97.6*
1918	1,409,530	2,167	2,064	153.7	146.4	95.2
1919	1,464,360	2,060	1,707	140.7	116.6	82.9
1920	1,393,292	2,053	1,651	147.3	118.5	80.4
1921	1,420,576	1,948	1,358	137.1	95.6	69.7

*Pulmonary fatality rate (Causes of other forms not reported until 1918).

Digitized by Google

MORBIDITY AND MORTALITY FOR PULMONARY TUBERCULOSIS BY COUNTIES FOR THE YEAR OF 1921

County	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per Cent.)
NEW HAVEN COUNTY	427,255	682	333	159.6	77.9	48.8
New Haven* City	166,986	369	101	221.0	60.5	27.4
Waterbury* City	94,584	152	60	160.7	63.4	39.5
FAIRFIELD COUNTY	332,619	422	342	126.9	102.8	81.0
Bridgeport* City	149,947	225	126	150.1	84.0	56.0
Stamford* City	41,790	51	30	122.0	71.8	58.8
HARTFORD COUNTY	349,290	436	227	124.8	65.0	52.1
Hartford* City	144,080	185	68	128.4	47.2	36.8
New Britain* City	61,695	110	25	178.3	40.5	22.7
NEW LONDON COUNTY	106,675	121	150	113.4	140.6	—
LITCHFIELD COUNTY	77,189	28	32	36.3	41.5	—
MIDDLESEX COUNTY	46,691	77	62	164.9	132.8	80.5
TOLLAND COUNTY	27,333	17	13	62.2	47.6	76.5
WINDHAM COUNTY	53,504	45	27	84.1	50.5	60.0
TOTAL FOR STATE	1,420,576	1828	1186	128.7	83.5	64.9

*City totals are included in County figures.

Digitized by Google

Typhoid Fever

There were 460 cases of typhoid fever reported during the year. These cases were carefully investigated by the local health officers or by this Bureau. The typhoid epidemiological record blanks cover 451 cases. The records show that the source of infection was determined in 171 cases, 37.2 per cent. of the total number of cases reported.

Summary of Infection of Typhoid Cases

Source of Infection	Secondary		
	Primary Cases	Contact Cases	Total Cases
Food			
Contaminated by a typhoid carrier	6	7	13
Contaminated by a clinical case	24	23	47
Contamination unknown	45	2	47
Milk			
Contaminated by polluted spring	7	0	7
Water			
Bathing in polluted water	7	0	7
Drinking polluted well water	2	0	2
Contact with known typhoid cases	36	0	36
Infected outside of state	12	0	12
Totals	139	32	171

The "secondary contact cases" are persons apparently infected by a previous case in an outbreak or epidemic, and not caused directly by the contaminated food.

It is the endemic cases, 289 in number, on which we should particularly center our attention, seeking the cause of their infection to prevent further cases from the same focus:

Comparison of Endemic Typhoid Cases

	1918	1919	1920	1921
Endemic Cases	399	354	261	289
Cases in Outbreaks	44	61	165	171
Typhoid Cases, Totals	443 cases	415 cases	426 cases	460 cases

These endemic cases are caused by unknown sources such as typhoid bacilli carriers, or mild unknown cases, the former of which may continue to cause sporadic cases for the duration of his life-time.

The cause of typhoid cases is being more often found now than in former years, before bacteriological laboratories were available to assist in the diagnosis of mild typhoid fever cases and the detection of "carriers."

Digitized by Google

It is widely recognized that less than 10 per cent. of typhoid cases are fatal. This means that during 1921 when the fatality rate for the state was 10.6, there was a better reporting of cases than ever before. This may account for the increase in cases reported compared with 1919 or 1920 whereas the deaths were lower than either of the years mentioned.

There were no cases of typhoid due to any public water supply and only 7 cases were connected with contaminated milk. This indicates the value of the work carried on by the different health agencies and municipalities in carrying out plans to furnish a pure drinking water for cities and towns and the value of careful investigation of the manner in which milk is produced. There is little doubt that the pasteurization of milk prevented at least one epidemic of typhoid in Norwalk on a route where two employees at a farm supplying milk to Norwalk, milked cows and handled the milk while ill with typhoid fever. No cases occurred in Norwalk.

In addition to the 460 cases of typhoid, there were 48 cases of paratyphoid reported (See Paratyphoid Fever).

TYPHOID FEVER

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	508	119	37.5	8.8	23.4
1918	1,409,530	443	74	31.4	5.2	16.7
1919	1,464,360	415	56	28.3	3.8	13.5
1920	1,393,292	426	58	30.6	4.2	13.6
1921	1,420,576	460	49	32.4	3.4	10.7

TYPHOID FEVER—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (per 100,000)
Fairfield	332,619	42	12.6
Hartford	349,290	196	56.1
Litchfield	77,189	5	6.5
Middlesex	46,691	17	36.4
New Haven	427,255	161	37.7
New London	106,675	22	20.6
Tolland	27,333	3	11.0
Windham	53,504	14	26.2

Digitized by Google

Typhoid on Milk Farms

A case (T. O.) of typhoid was reported on the O. farm in Wilton in October. The milk from this farm was sold to a milk distributor in Norwalk, who pasteurized all the milk before it was sold.

No cases were reported from Norwalk in October or November demonstrating the value of the pasteurization process.

The son, H., was ordered to move from the farm on October 18 by the local health officer and the milk allowed to be sold until October 24 when the son, who had been living four miles away, was taken ill with typhoid. The milk supply was then shut off and remained so until three negative specimens of urine and feces were obtained from both cases on December 23rd and the premises of the farm had been reconstructed to comply with the State Dairy and Food Commissioner's regulations.

Typhoid, East Granby—Typhoid Carrier Outbreak

An outbreak of 18 cases of typhoid occurred on the H. Tobacco Plantation in East Granby extending over a period of four months. The first five cases, ill in July and August, were never reported but the physician who attended them while they were ill and who co-operated in seeking the cause of the outbreak later, concluded that they were definite cases of mild typhoid fever.

The first two cases reported were on September 28th, followed by one case on October 12th and ten cases on October 22nd when the investigation was made at the request of the local health officer.

The investigation brought out the above facts.

Ten of the cases worked on H. plantation, and seven were children in their families. One case lived in a house adjoining the plantation.

Two of the first cases in July and August were found through the co-operation of Dr. C., both having worked in the plantation kitchen, one as a cook and the other as a helper. In going over the list of kitchen workers a person, E. R., was located who had typhoid in East Hartford in November, 1920, and subsequently was found to be a typhoid bacilli carrier. Specimens of blood, feces and urine were obtained from the kitchen workers and typhoid bacilli were found in the urine of E. R., proving him to be a typhoid bacilli carrier.

Digitized by Google

He had probably been a "carrier" ever since November when he was ill, and undoubtedly caused the outbreak of 18 cases.

The water supply of the plantation was carefully investigated by an engineer of the department and five wells were condemned as unfit for public use because of the location of nearby privies.

The milk supply was also carefully investigated. It was found that all but one of the cases had milk from the F. Route, which also distributed to many houses in Poquonock, where no cases were found or had been reported.

The H. Plantation co-operated in carrying out the investigation and paid for the services of two physicians who gave the typhoid vaccine to all of the workers and their families in the area affected.

Norwich—Typhoid Cases Due to Milk

There were 7 typhoid cases in one outbreak apparently due to contaminated milk. Two additional cases in this outbreak occurred in January, 1922, making a total of 9 cases in the outbreak. This outbreak was in Norwich and involved the milk route of the B. farm. Careful investigation by the local health officers of Norwich City and Town, assisted by physicians and engineers of this Department located the probable source of infection as a polluted water supply. The water supply was from a spring piped to the barn and was used to wash the milk cans and milk utensils. The survey of the situation disclosed the fact that the supposed spring received drainage from a cesspool on an adjoining farm through drains, underdraining the field. At this neighboring farm there lived a person who had previously had typhoid fever.

Several bacteriological examinations were made of specimens of body discharges at the State Laboratory, but no typhoid bacilli were found.

The water of the spring and also of the drain showed marked contamination by the presence of large numbers of colon bacilli. In addition, an odor of sewage was preceptible in the drain near the spring.

Enfield—Typhoid Cases Due to Contaminated Food

Since the epidemic in Thompsonville in 1920, 9 typhoid cases had been reported in January, February, March, May, June and July. On August 1, there were 11 cases reported to the Department, the onset of the cases being from July

Digitized by Google

8 to July 29. From August 1st to November 14, 60 cases were reported. Of the 60 cases, 24 were apparently due to the initial infection, 23 cases had been in contact with one or more of these typhoid cases and in 13 cases the history of contact with a typhoid case could not be definitely established.

A prompt investigation the first day excluded milk or water as the probable cause and centered attention on the P. C. Store where all of the cases obtained practically their entire food supply.

Milk Supply

All of the cases obtained milk from the P. C. Route. This route bought milk from the P., M. and W. farms, investigated in 1920, and the R. J. W. farm which did not furnish milk to the route in 1920. The R. J. W. farm was found to be selling milk to two other milk distributors, who had no cases on their routes. Blood from P. T. and J. S., the two milk-men, gave a negative Widal Test.

Water Supply

The water supply was the town supply distributed throughout the town.

Nationality

The nationality of all the early cases was Polish, indicating the probability of some factor as a cause, affecting this nationality particularly. The only factors were found to be picnics and the P. C. Store.

P.C. Store

There were five persons acting as clerks in the store, three of whom were there in 1920. One of these, S. J., had typhoid in August, but specimens of blood, feces and urine failed to show him a typhoid bacilli carrier.

The geographical distribution of the cases showed the early cases to be near the store, while the Polish people who lived at a distance were not affected to the same extent.

It was then found that one of the extra clerks at the store, P. T., worked as a clerk after he returned from the mill each night, and that his wife had been taken sick with typhoid fever on July 15th, or possibly earlier. He was taking care of his wife and selling food in the store each day until August 1st, the first day of the investigation.

Digitized by Google

DISTRIBUTION OF CASES BY MONTHS OF ONSET

Source	July	August	September	October	November	Total
Food	14	10	0	0	0	24
Contact	5	12	2	4	0	23
Unknown	1	7	4	1	0	13
	20	29	6	5	0	60

DISTRIBUTION OF CASES BY MONTHS OF REPORT

Source	July	August	September	October	November	Total
Food	0	23	1	0	0	24
Contact	0	12	6	2	3	23
Unknown	0	3	5	4	1	13
	0	38	12	6	4	60

Cause of the Epidemic

The cause of the epidemic was apparently due to P. T. who worked as clerk each night in the store until August 1 and had been taking care of his wife ill with typhoid since July 15. It will be noted in the above table that after August, there were only 6 cases in September and 5 in October, by date of onset. Of these, 3 October cases and two September cases were definite contact infections with previous cases. One of the remaining cases was infected outside of Enfield while on vacation.

TYPHOID—PARATYPHOID EPIDEMIC

Introduction

Several cases of a disease, at first unrecognized by physicians but which were in a few days diagnosed as typhoid or paratyphoid fever, were reported to the Hartford Board of Health on May 13th, which in turn on May 16, 1921, notified by telephone the State Department of Health.

This report presents the results of the investigation carried on in the towns where cases occurred, by the local boards of health, physicians, and the State Department of Health.

The true nature of the disease was apparently first recognized by Dr. Brayton of Hartford who notified the local board of health of several cases in his practice on Friday, May 13, 1921.

It was soon found that Doctors Locke and Goodrich, who treat children particularly, had similar cases of the disease.

Cases were reported from the following cities and towns

Digitized by Google

from April 20 to June 14, 1921, and those cases apparently connected with the epidemic are noted:

City or Town	Total Cases		Epidemic Cases	
	Typhoid	Paratyphoid	Typhoid	Paratyphoid
Hartford	25	27	23	27
West Hartford	4	3	4	3
East Hartford	3	0	3	0
East Windsor	2	0	1	0
Rocky Hill	7	0	7	0
Middletown	2	0	1	0
Manchester	1	0	1	0
Simsbury	1	2	1	2
Enfield	1	0	1	0
Windsor	1	0	1	0
Windsor Locks	1	0	1	0
Farmington	1	0	1	0
Totals	49 Cases	32 Cases	45 Cases	32 Cases

Physicians' Investigation

Dr. Brayton, who first suspected the nature of the disease, had seen several children in Hartford, Rocky Hill and Portland, and in gathering a history of the cases was enabled, by eliminating other possible sources, to state tentatively that ice-cream was apparently the only possible article of food in common to all the cases. The Portland case was subsequently excluded from the list as not typhoid.

Dr. Locke of Hartford reported a series of 18 cases at the Hartford Medical Society meeting on May 16th in which he stated that the disease was apparently a new one to this part of the country.

A checking of the cases later showed the apparent justification in the ice-cream theory as the cause of the epidemic.

Warning to Health Department

The New York authorities and other towns in Connecticut were notified of the possibility of a typhoid outbreak by circular letters sent out on May 19th. New York responded by giving a history of typhoid at Pine Plains, N. Y., which interestingly proved to be a paratyphoid outbreak, similar to that in Connecticut, and investigation apparently confirmed the suspected connection between the outbreaks.

Digitized by Google

Investigation by Health Authorities

When the Bureau of Preventable Diseases of this department was notified of the probable typhoid epidemic on May 16th by Dr. Botsford, Health Officer of Hartford, and it was seen by the Director who attended the Hartford Medical Society meeting in the evening that there was a difference in opinion among physicians at that time as to the character of the disease, it was recommended at this meeting by the Director that blood cultures and Widal Tests be made of all the cases by physicians who had patients under their care and that preventive measures be taken with the cases that are customarily taken in caring for cases of typhoid until the true nature of the disease be recognized.

Character of the Disease

Some of the cases presented symptoms of a typical character, but others had a sudden onset, headache, loss of appetite, tender abdomen, and papules slightly darker than rose spots, which disappeared on pressure.

It was not uncommon for a patient to have three to ten stools during twenty-four hours; others, on the other hand, were slightly constipated early in the disease, followed by a mild diarrhoea. Temperatures varied from 101°F. to 104°F.

Most of the cases were mild, but two deaths occurred during the epidemic. Several of the cases recovered practically entirely in less than a week.

Clinical Diagnosis Confirmed by Widal Tests

Blood was taken from 49 of the cases for Widal Test examination and it was found that 43 of the patients gave a positive agglutination test for typhoid or paratyphoid "B" organisms.

WIDAL TEST ON CASES

Disease	Cases	Blood Collected	Widal Test	
			Positive	Negative
Typhoid	46	32	28*	3
Paratyphoid	29	17	15	2

*One partial

In other words, 87 per cent. of the cases in which the agglutination test was carried out, gave a positive report for typhoid or paratyphoid fever. In the case of three of

Digitized by Google

the negative Widal Tests, these were made less than two weeks after the onset of the disease so they would not necessarily be positive until later on in the course of the disease.

Possibility of Two Separate Outbreaks

Soon after it was apparent that there was an outbreak of typhoid, many paratyphoid cases were reported and the possibility of two separate outbreaks occurring simultaneously suggested itself, one of typhoid fever and the other of paratyphoid fever.

A glance at the accompanying chart will show that this possibility is a remote one, for the onset of the cases in both diseases occurred practically at the same time, and the greatest number of typhoid cases were in the same week that the paratyphoid cases reached their highest incidence.

Similarly there is a corresponding similarity in the age incidence of the disease.

Possible Source of Infection

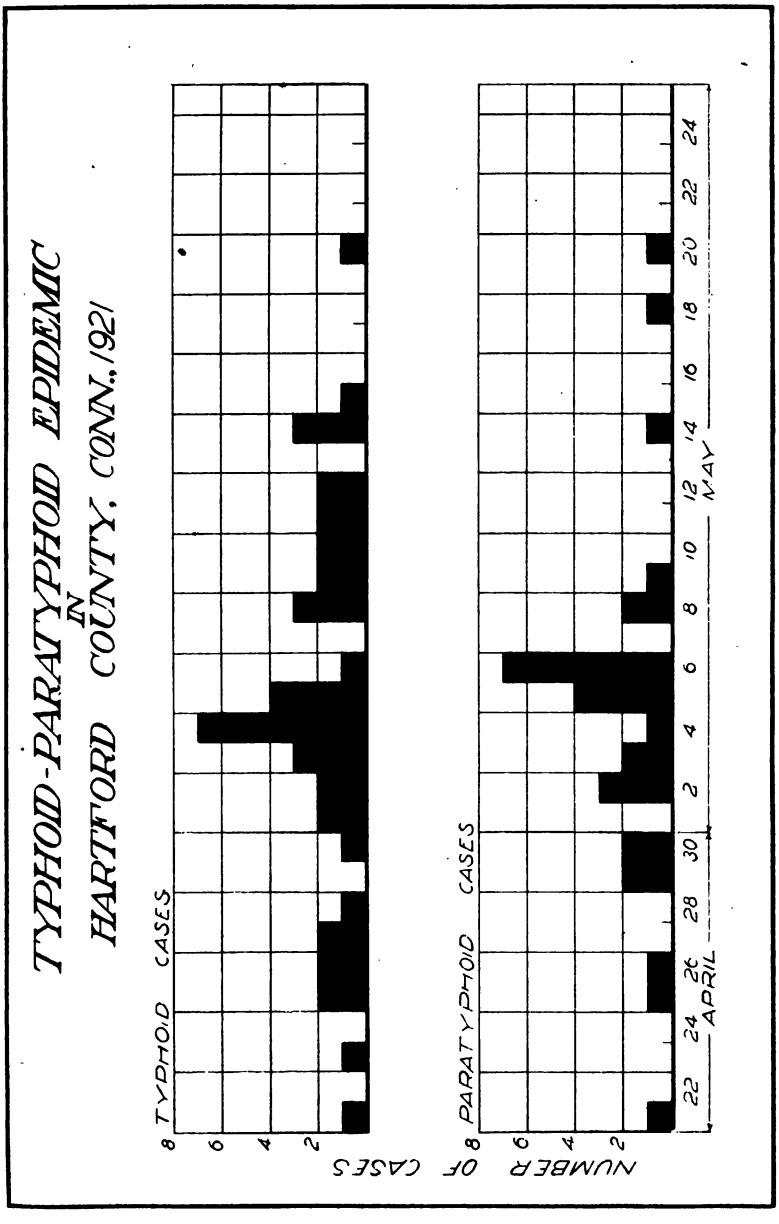
There were so many cases known by May 16th that by plotting these cases it was seen that there were but few cases east of Main Street, in Hartford, that cases were reported outside of the city, and that many—apparently an unusual proportion—were children. This led to seeking for a cause that would not limit the cases to Hartford for the outbreak, particularly when cases were reported from other cities of the state where the cases had a different milk and water supply; and later, cases were reported from Pine Plains, N. Y. The cases were not confined to any nationality or section of the city but affected all classes of society.

Water

When the epidemic was first reported, the Hartford Board of Health and Water Board carefully investigated at once the possibility of a water-borne infection. It was found, however, that the distribution of the cases, together with the history of complete chlorination of the city water supply, excluded water as a possibility.

The cases in other communities, who had not visited Hartford or West Hartford, assisted in eliminating water as a cause.

Digitized by Google



Digitized by Google

Milk

Investigations into the milk supply showed that twenty dealers were involved, in some instances the family of a patient buying extra milk or cream from a store or other milk dealer. In eight cases the patients obtained milk from their own farms.

The cases on the milk dealers' routes were as follows:

Dealer	Cases on Route	Dealer	Cases on Route
B. & C. (Pasteurized)	38	LaP.	1
A.	1	M.	1
J.	1	Kr.	1
Bak.	1	S.	1
Bar.	2	L. G.	1
Ka.	2	Lin.	1
Pac.	1	S. A.	1
H. D. (Pasteurized)	6	Ke.	1
Chr.	1	Ph.	1
Pev.	1	Own cow	8
		Questionable	7

In the case of dealer B. & C., this is the largest dealer in Hartford, covering the entire city and supplying many stores, and it was not particularly surprising to find a large number of the cases on this route. This firm does not distribute to the places where the out-of-town cases were reported.

The comparatively small number on the route, the numerous cases outside of the district served by the B. & C. supply, and the fact that it had been properly pasteurized as shown by the temperature records, soon eliminated this milk from any suspicion.

Food

With the elimination of water or milk, the only common article of food that was common to all narrowed down to ice-cream. In inquiring in regard to the particular kind of ice-cream consumed, it was found that the N. ice-cream made at Hartford was apparently common to nearly all of those ill.

The ice-cream factor was the first one that would satisfy the distribution of the cases, for wherever there was a case in and about Hartford, it was found that this ice-cream was distributed. Not only in Connecticut, but curiously enough, an outbreak of typhoid and paratyphoid fever occurred in Pine Plains, N. Y., the time of the onset of the cases coinciding with the outbreak in Connecticut, and the N. ice-cream was found to be sold in Pine Plains.

Digitized by Google

The first case was apparently a child taken care of by a woman who worked in the store where the N. ice-cream was sold.

Food as a Possible Cause

A search for typhoid bacilli carriers as a source was made and none found. Indeed it was extremely unlikely that a carrier could be considered as the cause of the infection because of the small likelihood that any individual would be a carrier of typhoid and paratyphoid germs. It seemed only reasonable that whatever caused the outbreak must be a food handled by many individuals in order to contain the b. typhosus and b. paratyphosus B., as the infecting agent must have had, to produce the two separate diseases in the same epidemic.

The possibility of some products entering into the manufacture of the ice-cream itself was suggested and in considering the different materials it seemed that the food most likely to be handled by a large number of persons was the egg yolk powder.

This egg yolk powder is made by two processes, the so-called "powder" process and the "flake" process. In the powder process the egg yolks are blown through a narrow orifice into a heated chamber and the spray falls as a powder. In the other process, the egg yolk is allowed to dry on surfaces, usually long, metal belts or steel drums, and is then removed.

Subsequently, samples of egg yolk powder and egg yolk flake were taken to ascertain if typhoid or paratyphoid bacilli could be found in this material. The particular case of the egg powder that entered into the manufacture of ice-cream which may have caused the epidemic had been used up, so a sample was taken from the sifter used in sifting this powder.

Of the nine samples investigated in laboratory, two of the egg powder samples were found to contain b. coli and three samples of the egg flake were found to contain b. coli.

Digitized by Google

BACTERIOLOGICAL EXAMINATION OF EGG POWDER SAMPLES

	Sample	Laboratory Report
1	In sifter of egg powder	Negative
2	New can	Negative
3	New can	b. coli
4	New can	b. coli
5	New can	Negative
6	New can	Negative
7	Egg flake	b. coli
8	Egg flake	b. coli
9	Egg flake	b. coli

Examination of Egg Powder

The egg powder and egg flake used at the plant were obtained from five separate firms. The firm supplying egg flake stated that the eggs used in making their "flake" egg yolk are carefully graded by candle, sight and smell and that three eggs are broken in a sterile glass cup. If one of these proves to be bad, the contents are thrown away. They stated that the air in the building is filtered and that the flake powder is brought from China to the United States in cold storage and stored in cold storage on this side. The refrigeration apparently is necessary because of the high moisture content of the "flake" egg yolk powder, it containing approximately 14% water. The egg powder process does not need refrigeration as it contains but approximately 3 or 4% moisture.

Number of Cases Eating N. Ice-Cream

An ice-cream history was obtained from 68 cases, 60 of which gave a definite history of eating the N. product. Negative history was obtained in connection with popcorn peddlers or ice-cream peddlers in certain cases. In the remaining eight cases, the ice-cream history was lacking.

Investigation of the N. Ice-Cream Plant

This plant was in a state of more or less upheaval as alterations were being made, new mixing vats or cookers and holding tanks being installed. The new equipment that has since been installed is a great improvement over the old, if properly operated.

Digitized by Google

Process of Manufacture of the Ice-Cream

The ice-cream was made from cream, sugar, egg yolk powder, gelatine, flavors, colors, etc. The ingredients of this ice-cream were carefully investigated and examined for the cause of the epidemic.

The cream was put in a large tank holding approximately 550 gallons, which was heated by a revolving steam coil. The information furnished by the employee who had charge of this was that he heated it to about 150° F. and when it had reached that temperature he added about 600 lbs. of sugar, adding this material slowly and turning it in constantly. The adding of the sugar was completed in twenty to twenty-five minutes, and he stated that at this time the temperature was reduced to approximately 125° F. The other materials are added at this point. The heating of the cream makes a custard which is desired for this particular cream. All ice-cream produced at this plant was made in this tank and from there flowed in pipes to the freezers situated on the floor below. There was a battery of freezers and an opening in each freezer enabled the flavors to be added. On freezing, the cream was allowed to flow into cans and molds. It was then placed in the cold storage room for storing.

The Ice-Cream

The cream entering into the product was condensed and pasteurized cream. The Hartford Board of Health found that the records showed the B. & C. pasteurized cream had been properly pasteurized.

The condensed cream was supplied by the T. Co. in Springfield, Mass., and G., in Boston, Mass.

A special investigator was sent to Springfield to obtain first-hand information. He found that the condensed cream arrived from Bangor and Fort Covington, in New York State. Five men were employed in the plant, none of whom had typhoid fever at present or in the past, nor had other members in their families. Only two came in contact with the cream (1) F. M., who opened the 40qt. cans, and the chemist who tested the cream. Blood, feces and urine from F. M. were negative for typhoid and paratyphoid, these specimens being collected by the Springfield Board of Health and examined by the Massachusetts Department of Public Health laboratory.

Digitized by Google

The examination of the creameries furnishing cream to T. was carried out by the N. Y. State Department of Health. Their report was as follows:—

Investigation Milk Condensing Plants at

Bangor and Fort Covington

By Dr. Sayer, State Sanitary Supervisor

In reply to memorandum date of May 23rd relative epidemic Hartford, Conn. I have been over the situation at both Bangor and Fort Covington and find as follows:

The F. Company operates two plants, one at Bangor and the other at Fort Covington and the investigation was made with the health officers of Fort Covington and of Bangor with the superintendents of the plants.

The Bangor plant was operated during the winter and up to May 1st, 1921, as a milk receiving station only, this milk being sent to the Fort Covington plant for manufacture. All the products of both plants are shipped to B., Springfield, Mass., who manufacture ice-cream and distribute condensed milk throughout New England, only a part of their supplies being obtained from the F. Company. A part of the T. supply goes to Hartford to the N. Company. For this N. Company, the F. Company manufactures a "special" condensed milk which is called "special Hartford." I find by reference to the company's books that this brand of milk was only shipped on the following dates. During April on the 18, 23, 24, 26, and 30, during May on the 2, 3, 4, 5, 6, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27; all milk up to and including May 2nd being from the Fort Covington plant. During the days not mentioned above, "whole plain" condensed milk was shipped to T., which may have been reshipped to Hartford.

I find that the condensed milk is canned when hot and is not opened until delivered. The time sheets of the F. Company show no absences whatever among the Fort Covington plant employees from Jan. 1st to the present time except one which was not due to illness. There is no history of typhoid or other illness among the families of the workmen as vouched for by the health officers.

Any possible infection of this supply during time indicated would be at Fort Covington plant and if you wish further examination of the workmen at this plant, advise me and I will see that it is done.

Digitized by Google

Further Investigation by Dr. Sayer

"I have today investigated the W. Condensed Milk plant at Waddington with the superintendent and the health officer. I find that there are but five men who handle condensed milk in any way at this plant, none of these men have a history of either typhoid or paratyphoid and none have been ill in many months. The men were examined for the presence of communicable disease during the months of April and May and all have certificates on file.

Beginning April 8th and ending May 27th this plant has been shipping a "special condensed milk" for the N. Co. During the same time condensed milk from same pans and handled by same men has been shipped to W. Co. and the L. Co., New York City, besides to local northern New York ice-cream plants.

This "special condensed" was shipped through the G. Company of Boston. Other condensed milk is all handled in the same way as this "special" and the other products were as likely to have been contaminated.

The W. Co. is very anxious to assist in any way possible and if you have reason to desire examination of the men who handle the finished product we will have it done."

The G. Co. at Boston was a wholesale jobbing firm acting as middleman and merely distributing the milk that it receives. It supplied condensed milk to the N. Company, this particular milk being furnished by the W. Co., Waddington, N. Y., in 40 qt. cans. These cans are not opened in Boston but are re-routed direct to Hartford.

An investigation by the Massachusetts Department of Public Health showed that there were no cases of illness among the employees of this plant prior to the epidemic in Hartford and that there were no cases of illness at the time of the investigation.

The condensed milk was shipped to Hartford by the G. Company on April 6, 9, 11, 12, 13, 16, 21, 22, 23, 25, but no raw cream was shipped until May 11th.

The New York State Department of Health through their district supervisors and local health officers carried out an investigation of the Waddington, N. Y., plant and reported that everything at the plant was in excellent condition and that there had been no cases of typhoid fever there.

The reports of the Massachusetts Department of Public Health and the New York State Department of Health are given:—

Digitized by Google

Investigation of Milk Condensing Plants by Dr. French

On Monday, May 23rd, the following report was received from G. Co., Boston:

"No one has been sick, out of work or indisposed. Milk comes from Henryville, Canada; St. Sebastian, Canada; and Clarenceville, Canada; and has been coming from this source for from two to three years. Milk comes daily. For past week to ten days have been buying a small amount from F. S. C., Somerville.

"Condensed milk comes from Waddington, New York.

"The above includes both milk and cream. All is pasteurized before arriving in Boston."

Inasmuch as all cream sold is pasteurized before delivery and as there has been no illness among the employees for some months it looks as though this possible source has been proved negative."

Summary of Milk Entering into the Manufacture of Ice-Cream

Investigation showed that no raw milk or cream was being used in making ice-cream and that it was either pasteurized, homogenized or condensed. Investigation of the employees at the different milk plants apparently excluded any possibility of the milk becoming infected by an employee.

The 40-qt. cans of milk are supposed to arrive at the ice-cream plant with the covers of the cans wired on, but cans were found on which wires had been broken and from which the covers could be easily removed.

Paratyphoid Case in the Home of N. Co.

A case of paratyphoid fever that was reported on May 24th had its onset on May 3rd. This patient was E. P., and was found to be ill on May 18th when investigated by a representative of the State Department of Health. Her condition was such that it was apparently a case of typhoid or paratyphoid fever.

On making inquiries it was found that H. B., an employee of the N. Company, lived at this home. The child had been ill for fifteen days at this time and H. B. had been working in the N. plant daily during this period. He was a driver of one of the trucks and stated on inquiry that he did not know he should not work when there was illness at home.

Digitized by Google

This information was promptly given to the health officer of Hartford, who stopped H. B. from working at the plant until he changed his residence.

Examination of Employees.

An effort was made to see if a typhoid carrier was present among the employees or not. Twenty-seven employees were examined for this purpose, but the Widal tests for all of them were negative with the exception of F. S. who had been discharged from the Navy in February at which time he was vaccinated against typhoid.

The employees examined were the employees in the ice-cream making room, the men who packed the brick ice-cream and the men who put up orders. In addition to the men who handled the raw cream, certain of the drivers and helpers that delivered ice-cream to stores about Hartford in the areas where the cases occurred were examined. These drivers and helpers did not handle the raw ice-cream, but merely delivered it to the drug stores and packed it in salt and ice. The thirty-eight remaining, including drivers and helpers, were questioned regarding recent sickness and their time cards were examined for days off. No suspicious illness was found among this latter group.

Distribution of the Ice-Cream

The ice-cream was distributed to the following communities. Cases occurred in the communities starred:

*Windsor
*Rocky Hill
Rockville
Hockanum
Cromwell
Portland
*Warehouse Point
*Middletown
Wauregan
South Manchester
Willimantic
Stafford Springs
Avon
Putnam
Glastonbury
Pequonock
Canaan
*Broad Brook
Canton
East Windsor Hill
Winsted
Norfolk
*Windsor Locks
Higganum
New Hartford
Essex
Bloomfield
Suffield
*Enfield
*Simsbury
Farmington
Andover
*Unionville
*East Hartford
*West Hartford
Gildersleeve
Collinsville
Moodus
Webster, Mass.
*Pine Plains, N. Y.

Digitized by Google

Most of the ice-cream in Hartford County was distributed by trucks. The so-called "center route" truck was operated by I. H., driver, with L. S. as helper. This route is the one supplying most of the drug stores in the center of the city. Another truck distributing cream to a district where cases occurred was operated by D. as driver and B. as helper. A third truck covering a part of the city where cases occurred was operated by L., driver, and J. L., as helper. A fourth truck which distributed ice-cream to Middletown was operated by H. B. as driver, who was employed April 1st, and was accompanied by H. A., a helper. H. B. was the individual in whose home the paratyphoid fever case had its onset May 3rd.

It will be noticed that in every place where cases occurred, ice-cream was distributed, although in some places where ice-cream went no typhoid followed.

There were practically no cases reported in any city, town, or borough in northern Connecticut where the ice-cream from the N. Company was not delivered.

Condition of the Plant

At the time of investigation on May 16th and for several days following, the plant was being remodelled and a cold storage room was under construction, new cooking vats and holding vats were being installed with other necessary appliances.

Employees were dressed in white uniforms and suits which were in fair condition.

The examination of water in the cooling vat, where the surplus cream was cooled, was done by the laboratory of the Hartford Board of Health and showed large numbers of b. coli in the water.

Method of Washing Five-Gallon Ice-Cream Tins

The present method of washing is far superior to the old one which was in use at the time that infection possibly occurred, according to employees of the N. plant.

The present method consists of immersing several tins in water contained in a wooden tank approximately 6 ft. square and about 2 ft. deep. The cans are held by hand on revolving brushes,—that is, the inside of the cans are washed by revolving brushes and as the can revolves, two other brushes wash the outside of the can, the water for washing the inside and outside being the same. The water is not boiling, for as the cans are held by hand it cannot

Digitized by Google

be at a temperature above the scalding point. After being washed, the cans are inverted and placed over a hand operated steam jet which is operated for about five seconds taking three or four seconds to close. This method of steaming the can at the end is to be made better by a jet of boiling water to rinse the cans well, followed by steam jet as now operated.

Pop Corn and Ice-Cream Peddlers

Several Greek peddlers were suspected of possibly causing the epidemic. These peddlers kept their horses in two stables. Others do not have horse-drawn vehicles but operate push carts.

One stable was in a dilapidated condition. There was a central passageway through the building with eight stalls for horses on either side, only a few of which were in use, however. As the stalls were not all used, several were fitted with doors, one of which was used to keep a small supply of ice-cream cones in, and was in a fairly clean condition when seen.

The other stable, in the adjoining yard, had one row of six stalls and a passageway in the rear along the side of the building. In neither barn was there any evidence of human excreta.

Several of the patients in the epidemic furnished no history of having obtained food from these peddlers, and this it not surprising in view of the age of the individuals.

The peddlers popped corn in their own carts in the yards at P. Street and then went to different parts of the city to sell their wares. Several sold ice-cream and the ice-cream that they used was that obtained from the N. Company.

Laboratory Examination of Peddlers

The eight peddlers selling ice-cream or pop-corn had their blood and feces examined by the laboratory of the Hartford Board of Health, all of which examinations were found to be negative.

Conclusions

(1) An epidemic consisting of typhoid and paratyphoid fever occurred in Connecticut and Pine Plains, N. Y., during April and May, 1921.

(2) The onset of the cases would seem to indicate that they made up a single epidemic.

Digitized by Google

(3) The investigation apparently shows but one food in common to all of the cases, ice-cream.

(4) The cause of the apparent infection of the ice-cream would seem to be some food preparation that entered into its manufacture, rather than a typhoid carrier or clinical typhoid case at the ice-cream plant.

(5) The manner by which the possible contamination took place was not found.

(6) The pop-corn peddler theory of the spread of the disease lacked even circumstantial evidence to make it seem likely that they were the cause of the epidemic, as the peddlers sold the N. ice-cream and popped their corn separately. In addition it would seem unlikely for any carrier among the peddlers to cause a double infection, e. g., typhoid and paratyphoid fever.

Typhoid in New Haven

From January to May 30, 18 cases of typhoid had been reported by the New Haven Department of Health. From June to August 31, 37 cases of typhoid fever were reported by New Haven.

At the request of Dr. Wright, Health Officer of that city, a brief survey was made, of the area in which a majority of the cases were located for a possible cause of the existing outbreak.

During September, 24 cases were reported and in October, 6 additional cases. Only 3 were reported in November and 1 in December.

The total number of cases in New Haven during the year was 89 cases or 19 per cent. of the total cases in the state during the year.

	MONTH OF REPORT			
Nationality of Cases	Jan.–May inc.	June–Sept. inc.	Oct.–Dec. inc.	Totals
Italian	11	24	18	53
All others	7	15	16	38
Totals	18 cases	39 cases	34 cases	91 cases

From this study we find 53 cases, or 58 per cent. of all cases reported in New Haven were Italians or children of Italian parents. The survey failed to show any one cause for the number of cases reported.

It was found, however, that many of the cases had been bathing in the waters of New Haven Harbor in the Mill

Digitized by Google

River and Quinnipiac River, and the section of the city near these rivers was where many of the cases lived. In fact, boys were found who had been swimming in the waters adjacent to the sewer outfalls and who had used the masonry of the outfall to dive from.

It was recommended that swimming be prohibited in the Mill and Quinnipiac Rivers and in New Haven Harbor.

Contact Cases of Typhoid

There were 68 cases of typhoid in people who received their infection from some other case.

Cases Infected by Known Typhoid Bacilli Carriers

There were six cases who ate food prepared or handled by typhoid bacilli carriers.

Previous Typhoid in Family of Patient

In 61 cases or 13 per cent., some other member of the family had typhoid previously, either recently or several years before. An attempt was made to have the necessary examinations made to determine whether one of these latter persons was a typhoid bacilli carrier or not, and this phase of the typhoid problem in Connecticut is without a doubt the field in which there is much opportunity for health officers to prevent the sporadic typhoid cases.

Digitized by Google

CONTACT CASES IN SAME FAMILY OR HOUSE

January	Bridgeport	3 cases in same household
February	Meriden	2 cases in same family
March	Meriden	
April		2 cases in same family
April	Wallingford	2 cases in same family
May	New Haven	3 cases in same house
June	Hartford	3 cases in same family
July	Hamden	5 cases in same house
July	New Haven	2 cases in same family
July-Aug.	Enfield	5 cases in same house
August	Enfield	4 cases in same family
August	Enfield	3 cases in same family
August	Enfield	3 cases in same house
August	New Britain	4 cases in same house
August	Hartford	3 cases contact with case in same house
August	Enfield	2 cases in same house
September	Enfield	2 cases in same house
September	Enfield	2 cases in same house
June-Sept.	Enfield	3 cases in same household
September	Milford	5 cases in same house
September	New Haven	3 cases in same household
September	New Haven	2 cases in same house
September	New Haven	2 cases in same house
October	Bridgeport	3 cases in same family
October	Enfield	2 cases in same family
October	West Haven	3 cases in same family
October	East Granby	2 cases in same family
October	East Granby	7 cases in same family
Oct.-Nov.	East Hartford	2 cases in same family
November	Enfield	3 cases in same family
November	Wilton	2 cases in same family

Cases Infected Outside the State

There were 12 cases who apparently received their infection before they came into Connecticut from some other state. Of this number 4 cases were brought to hospitals for treatment.

Age and Sex of Typhoid Cases

The age and sex of the 460 cases were reported. Of 460 cases, 264 or 57 per cent. were males, a greater percentage than females.

The age distribution is given on page 123.

Occupation of Typhoid Cases

There were 420 cases in which the occupation of the case was given. There were 147 school children ill with typhoid, a much larger number than in 1920, when only

Digitized by Google

79 cases were school children. The occupations of the remainder are given below:

School children	147	Merchants	5
Shophands	78	Engineers (railroad)	3
Housekeepers	68	Policemen	3
Pre-school age	28	Railroad men	3
Clerks	19	Stenographers	2
Laborers	17	Food handlers	7
Chauffeurs	6	Nurses and orderlies	3
Salesmen	5	Teachers	1
Farmers	8	Miscellaneous	17

Nationality of Cases

There were 217 cases among the native-born. Aside from this number, the Polish and Italian population made up the largest groups of cases. There were 93 among the Polish people, 56 of which were in Enfield and 73 cases among the Italian people, 53 of which were in New Haven.

The nationality of the remaining cases were as follows:

Russia	26	Hungary	4
Negro	8	Sweden	4
Germany	6	Lithuania	3
France	5	Greece	3
Armenia	1	Canada	3
Austria	1	Norway	1
England	1	Portugal	1
Finland	1	Scotland	1

Widal Reaction

189 cases were confirmed by the Widal Test. In addition, 17 cases had a partial Widal Test and 33 records stated the test to be negative. Of the 33 negative cases, 21 were made in less than 15 days after the onset of the symptoms. There were 145 of the positive Widal Tests made in less than 15 days after the onset of the disease. Of this number 46 were positive on or before the seventh day of the illness.

Sanitation of Homes

386 case records gave the condition of the home of the patient. This was stated as good in 232, fair in 103, and poor in 51. There were 89 cases treated in hospitals. Screens were on 258 of the patient's homes.

Digitized by Google

Cases in Hospital Employees

There were 2 nurses and 1 orderly among the typhoid cases in the state.

Six additional cases were persons who were relatives of patients acting as nurses and were infected by their occupation.

Typhus Fever

A fatal case of typhus fever was reported in Norwalk. It was taken to the Bridgeport Hospital where a diagnosis of typhus fever was made. The Felix reaction was not made. Careful investigation failed to disclose the person from whom the patient contracted the disease, although it was ascertained that he had recently been in contact with an immigrant from Ireland.

A suspected case in Suffield in March proved to be laryngeal diphtheria accompanied with macular rash, and died on the eighth day.

Whooping Cough

The epidemic of whooping cough that prevailed in 1920 continued in 1921, 2905 cases being reported. The deaths decreased, however, giving a fatality rate of 4.7, the lowest fatality rate for whooping cough the state has known for many years. This may be due in part to a more complete reporting of the cases and also to the fact that parents are calling physicians earlier in this disease, which for years has caused more deaths in Connecticut than typhoid, scarlet fever or measles.

During the first half of the year, whooping cough was most prevalent in Middlesex, New London and New Haven Counties. Tolland and Windham Counties had the highest incidence from August to December.

The cases of whooping cough reported by ages is quite constant up to the eighth year. Approximately ten (10%) per cent. of the whooping cough cases reported in Connecticut occur during each year of life from 0-7 years inclusive. This results in 70 per cent. of whooping cough cases being in children from 0-7 years old.

The distribution of deaths due to whooping cough discloses 70 per cent. of the deaths are in children under 2 years of age and practically 80 per cent. of all whooping cough deaths occur in children under 3 years of age.

Thus, as in measles, the older a child is before he has whooping cough, the more likely he is to recover.

Digitized by Google

WHOOPING COUGH

Year	Population	Cases	Deaths	Morbidity Rate (per 100,000)	Mortality Rate (per 100,000)	Fatality Rate (per cent. reported cases)
1917	1,354,930	1,911	113	141.0	8.3	5.9
1918	1,409,530	2,836	279	201.2	19.8	9.8
1919	1,464,360	904	58	61.7	4.0	6.3
1920	1,393,292	3,649	218	261.9	15.6	6.0
1921	1,420,576	2,905	137	204.5	9.6	4.7

WHOOPING COUGH—MORBIDITY BY COUNTIES

County	Population	Cases Reported	Morbidity Rate (per 100,000)
Fairfield	332,619	588	176.8
Hartford	349,290	783	224.2
Litchfield	77,189	123	159.3
Middlesex	46,691	175	374.8
New Haven	427,255	727	170.2
New London	106,675	333	312.2
Tolland	27,333	51	186.6
Windham	53,504	125	233.6

Digitized by Google

CASES AND DEATHS FROM

1921 New Haven County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Ansonia	8	—	49	—	25	—	17	1	42	4	1	2	1	—
Beacon Falls	—	—	17	1	2	—	—	—	3	—	—	—	—	—
Bethany	—	—	2	—	—	—	—	—	—	—	—	—	—	—
Branford	—	—	7	—	31	—	27	2	64	2	1	—	10	—
Cheshire	1	1	2	—	9	—	3	—	10	—	—	—	10	—
Derby (city)	1	—	3	—	12	—	8	—	21	2	—	1	5	—
East Haven	—	—	1	—	27	2	13	1	4	1	—	—	1	—
Guilford	1	—	1	—	1	—	2	—	1	—	—	1	8	—
Hamden	8	—	8	—	95	4	75	—	55	1	—	—	14	—
Madison	—	—	2	—	1	—	40	—	—	—	—	—	3	—
Meriden	10	2	40	—	181	4	46	3	108	3	13	9	54	—
Middlebury	—	—	—	—	2	—	—	—	—	—	—	—	1	—
Milford	3	—	6	—	48	—	21	—	50	2	—	—	38	—
Naugatuck	5	—	4	1	13	—	—	1	—	—	—	1	2	—
New Haven (city)	89	8	76	1	739	13	328	20	494	26	2	9	141	1
North Branford	1	—	—	—	1	—	—	—	3	—	—	—	—	—
North Haven	—	—	—	—	6	—	34	—	29	1	1	1	26	—
Orange	10	1	13	—	93	5	26	6	33	1	1	1	12	1
Oxford	—	—	2	—	2	—	—	—	—	—	—	—	—	—
Prospect	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Seymour	—	—	11	—	12	—	6	—	6	1	1	—	34	—
Southbury	—	—	—	—	—	—	7	—	1	—	—	—	2	—
Wallingford	8	—	64	2	77	—	12	—	21	—	—	—	4	—
Waterbury	15	2	210	3	218	7	62	6	129	7	16	7	218	—
Wolcott	1	—	1	—	5	—	—	—	3	1	—	—	—	—
Woodbridge	—	—	—	—	4	—	—	—	1	—	—	—	—	—
Total	161	14	520	8	1,604	35	727	40	1,078	52	36	32	584	2

1921 Middlesex County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Chester	—	—	2	—	7	—	23	—	2	—	—	—	—	—
Clinton	—	—	1	—	2	—	5	—	—	—	—	—	1	—
Cromwell	2	—	2	—	2	—	—	—	13	—	—	1	3	—
Durham	—	—	1	—	—	—	—	—	—	—	—	2	—	—
East Hampton	—	—	4	—	6	—	5	—	9	—	—	1	10	—
East Haddam	1	—	—	—	5	—	9	—	6	—	—	—	1	—
Essex	—	—	—	—	19	1	3	1	1	—	—	—	4	—
Haddam	1	—	6	—	1	—	3	—	3	—	—	—	3	—
Killingworth	—	—	15	—	—	—	1	—	—	—	—	—	—	—
Middlefield	—	—	26	1	10	—	4	1	—	—	—	—	4	—
Middletown	10	—	222	4	22	2	43	3	20	1	1	5	27	—
Old Saybrook	2	—	2	—	—	—	5	—	1	—	2	—	1	—
Portland	—	—	10	—	8	—	9	—	3	—	—	2	—	—
Saybrook	1	—	—	—	9	—	65	1	1	—	—	—	15	—
Westbrook	—	—	—	—	2	—	—	—	—	—	—	—	1	—
Total	17	—	291	5	93	3	175	6	59	1	3	11	70	—

C.—Cases D.—Deaths

Digitized by Google

REPORTABLE DISEASES, 1921

German Measles (19-B)		Mumps (19-C)		Tuberculosis (pulmonary) (28-29)		Tuberculosis (other forms) (30-35)		Syphilis (37)		Conjunctivitis Infectious (38-A)		Gonorrhoea (38-C)		Cerebrospinal Meningitis (61-C)		Pneumonia (lobar) (92-1)		Septic Sore Throat (100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	2	—	27	13	—	1	26	—	3	—	12	—	—	2	4	7	12	—
—	—	—	—	2	1	—	—	3	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	5	—	10	9	—	—	12	—	1	—	10	—	—	—	7	4	—	—
—	—	10	—	5	3	—	1	58	—	—	—	—	—	—	—	2	2	—	—
—	—	7	—	6	9	—	3	4	1	—	—	2	—	2	—	—	1	—	1
1	—	5	—	1	2	—	—	—	1	—	—	—	—	—	—	3	3	—	—
—	—	2	—	3	—	—	—	—	—	—	—	—	—	—	—	9	1	—	—
2	—	19	—	9	2	—	1	4	1	—	—	2	—	—	—	4	1	1	—
2	—	—	—	—	—	—	—	3	—	—	—	1	—	—	—	—	—	—	—
—	—	5	—	40	22	2	6	81	2	—	—	33	—	6	4	60	16	—	—
—	—	3	—	—	—	—	—	1	—	—	—	—	—	—	—	1	1	—	—
3	—	38	1	9	6	—	—	8	1	—	—	8	—	—	—	14	7	—	—
—	—	—	—	3	10	—	1	11	—	—	—	1	—	1	—	—	4	—	—
4	—	146	—	369	101	41	84	581	15	—	—	171	2	6	3	50	88	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
—	—	3	—	8	1	—	—	1	—	—	—	1	—	1	—	8	—	—	1
1	—	7	—	36	83	2	—	22	2	—	—	6	—	—	—	6	5	1	—
—	—	—	—	2	2	1	2	—	—	—	—	1	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	2	4	—	—	2	—	—	—	1	—	—	—	3	3	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	1	—	3	4	1	1	16	—	—	—	6	—	1	—	8	11	—	—
—	—	235	—	152	60	10	9	164	3	—	—	39	—	9	4	93	40	—	—
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	2	—	—
13	—	488	1	682	333	57	59	1,000	26	4	—	294	2	26	13	273	197	14	2

German Measles (19-B)		Mumps (19-C)		Tuberculosis (pulmonary) (28-29)		Tuberculosis (other forms) (30-35)		Syphilis (37)		Conjunctivitis Infectious (38-A)		Gonorrhoea (38-C)		Cerebrospinal Meningitis (61-C)		Pneumonia (lobar) (92-1)		Septic Sore Throat (100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	—	—	1	1	—	—	—	—	—	—	5	—	—	—	1	1	—	—
—	—	4	—	2	1	—	1	2	—	—	—	3	—	—	—	2	—	—	—
—	—	—	—	4	1	—	1	1	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	2	1	—	—	1	—	—	—	—	—	—	1	3	—	—	—
3	—	7	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	1	—	3	1	—	—	2	—	—	—	1	—	—	—	4	4	—	—
—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—
—	—	—	—	1	1	—	—	—	—	—	—	—	—	1	1	—	—	—	—
1	—	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	28	—	56	50	—	4	38	10	—	—	14	—	—	2	11	20	—	—
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	3	—	2	2	—	1	1	—	—	—	2	—	—	—	—	1	—	—
—	—	1	—	4	1	—	—	1	—	—	—	2	—	—	—	1	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—
9	—	46	—	77	62	—	8	46	10	—	—	27	—	2	5	22	27	—	—

C.—Cases D.—Deaths

Digitized by Google

CASES AND DEATHS FROM

1921 New London County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Bozrah	—	—	—	—	—	—	—	—	7	—	—	—	—	—
Colchester	1	—	19	—	8	—	2	—	3	—	—	—	7	—
East Lyme	—	—	—	—	3	—	1	—	—	—	—	—	—	—
Franklin	—	—	25	—	—	—	5	—	1	—	2	1	—	—
Griswold	1	1	5	—	1	—	—	—	19	—	—	—	23	—
Groton	2	1	32	—	42	—	26	—	30	—	3	1	50	—
Lebanon	—	—	71	—	—	—	5	—	—	—	—	1	11	—
Ledyard	—	—	—	—	3	—	—	—	3	—	—	—	1	—
Lisbon	—	—	—	—	—	—	—	—	2	—	—	—	—	—
Lyme	—	—	—	—	2	—	3	—	1	—	—	—	—	—
Montville	—	—	4	—	7	—	4	—	5	—	—	—	—	—
New London	3	2	16	1	81	2	130	—	27	3	—	2	47	—
North Stonington	—	—	1	—	—	—	—	—	2	—	—	—	3	—
Norwich	10	2	9	—	31	—	139	6	46	6	—	16	32	—
Old Lyme	—	—	—	—	—	—	11	—	—	—	—	—	1	—
Preston	—	—	—	—	—	—	—	—	11	2	—	—	—	—
Salem	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Sprague	—	—	—	—	3	—	—	—	2	—	—	—	—	—
Stonington	5	—	2	—	26	—	7	—	17	—	2	3	17	—
Voluntown	—	—	—	—	—	—	—	—	—	—	2	—	2	—
Waterford	—	—	—	1	6	—	—	—	3	—	2	1	—	—
Total	22	6	185	2	213	2	333	6	179	11	11	25	194	—

1921 Fairfield County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Bethel	—	—	17	—	3	1	1	1	2	—	1	1	—	—
Bridgeport	14	4	73	1	510	24	132	16	480	30	6	8	192	8
Brookfield	—	—	—	—	—	—	—	1	2	—	—	—	1	—
Danbury	5	1	37	—	23	—	3	3	18	3	—	3	2	—
Darien	1	—	5	—	15	—	10	—	8	—	7	6	—	—
Easton	—	—	—	—	1	—	—	—	1	—	2	—	—	—
Fairfield	1	—	15	—	52	1	86	1	88	1	—	—	9	—
Greenwich	7	4	479	2	41	—	244	5	62	1	16	4	128	—
Monroe	—	—	1	—	4	—	8	—	1	—	—	—	11	—
New Canaan	—	—	1	—	7	—	13	—	8	—	14	—	7	—
New Fairfield	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Newtown	—	—	1	—	10	—	—	—	—	—	1	—	5	—
Norwalk	3	2	10	1	25	1	16	3	63	3	5	14	8	—
Redding	1	—	2	—	—	—	3	—	3	1	—	—	2	—
Ridgefield	—	—	2	—	—	—	7	—	7	—	—	—	14	—
Shelton	—	—	24	—	39	—	1	1	14	—	2	2	3	—
Sherman	—	—	2	—	—	—	—	—	—	—	—	—	—	—
Stamford	4	1	77	—	133	4	71	5	45	6	19	15	127	1
Stratford	2	—	3	—	52	2	23	1	57	3	—	1	11	—
Trumbull	—	—	2	—	9	—	2	—	2	—	—	—	1	—
Weston	—	—	—	—	4	—	2	—	—	—	1	1	3	—
Westport	1	—	1	—	17	—	16	—	8	—	1	—	37	—
Wilton	2	—	—	—	4	—	—	—	2	—	2	1	5	—
Total	42	12	725	4	949	33	588	37	816	48	77	56	566	4

C.—Cases D.—Deaths

Digitized by Google

REPORTABLE DISEASES, 1921

German Measles (19-B)		Mumps (19-C)		Tuberculosis (pulmonary) (28-29)		Tuberculosis (other forms) (30-35)		Syphilis (37)		Conjunctivitis Infectious (38-A)		Gonorrhoea (38-C)		Cerebrospinal Meningitis (61-C)		Pneumonia (lobar) (92-1)		Septic Sore Throat (100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	12	—	1	2	—	1	—	—	—	—	—	—	—	—	1	—	—	—
—	—	—	—	1	2	—	1	15	—	—	—	1	—	—	—	2	4	—	—
—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
—	—	44	—	3	3	—	—	—	—	—	—	2	—	—	—	5	3	—	—
1	—	126	—	3	4	—	—	13	1	—	—	—	—	—	—	16	3	3	—
1	—	3	—	5	2	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	—	—	—	1	—	1	—	—	—	—	1	—	—	—	—	—	—	—
—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	3	2	—	—	3	—	—	—	—	—	—	—	—	1	—	—
2	—	50	—	33	11	2	6	80	2	—	—	17	1	1	1	30	23	—	—
—	—	4	—	1	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
2	—	2	—	19	86	—	4	55	2	—	—	6	1	1	1	6	20	—	—
1	—	—	—	1	1	—	—	—	—	33	—	2	—	—	—	2	1	—	—
—	—	—	—	34	27	—	—	—	7	—	—	—	—	—	—	1	1	—	—
—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	5	3	—	—	1	—	—	—	—	—	—	—	—	—	—	—
—	—	72	—	10	3	1	2	1	—	—	—	—	—	2	—	3	1	4	—
—	—	—	—	—	1	—	1	1	—	—	—	—	—	—	—	2	1	—	—
—	—	—	—	1	1	—	—	2	—	—	—	—	—	—	—	—	—	—	—
9	—	318	—	121	150	4	16	171	13	33	—	29	2	4	2	70	59	7	—

German Measles (19-B)		Mumps (19-C)		Tuberculosis (pulmonary) (28-29)		Tuberculosis (other forms) (30-35)		Syphilis (37)		Conjunctivitis Infectious (38-A)		Gonorrhoea (38-C)		Cerebrospinal Meningitis (61-C)		Pneumonia (lobar) (92-1)		Septic Sore Throat (100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	95	—	225	126	12	14	219	9	1	—	200	1	14	3	122	51	1	1
—	—	8	—	10	1	—	—	—	—	—	—	—	—	—	—	2	—	—	—
1	—	—	—	3	20	—	7	9	—	—	—	5	—	—	2	21	15	—	1
—	—	1	—	4	3	—	—	3	—	—	—	—	—	—	—	3	5	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	34	—	42	8	5	—	4	—	—	—	2	—	—	—	5	5	—	—
7	—	123	—	34	14	1	—	12	1	1	—	5	—	—	—	42	8	2	—
—	—	2	—	1	1	—	—	2	—	—	—	—	—	—	—	—	—	—	—
—	—	24	—	6	5	—	—	2	—	—	—	—	—	—	—	2	1	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	1	—	—	1	1	—	2	—	—	—	—	—	—	—	3	2	—	—
—	—	10	—	16	21	—	5	44	1	—	—	12	—	—	—	15	14	—	—
—	—	6	—	1	—	—	—	—	—	—	—	—	—	—	—	3	1	—	—
—	—	1	—	1	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—
—	—	10	—	4	93	—	—	7	—	—	—	4	—	—	—	5	4	—	—
—	—	—	—	1	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17	—	200	—	51	30	3	6	17	6	—	—	1	—	4	1	45	20	3	—
—	—	1	—	18	7	—	1	8	1	—	—	11	—	—	—	8	4	—	—
—	—	15	—	—	1	—	—	1	—	—	—	1	—	—	—	1	—	—	—
—	—	4	—	1	1	—	—	—	—	—	—	—	—	—	—	3	—	—	—
—	—	1	—	4	4	—	—	3	1	—	—	2	—	—	—	5	2	—	—
—	—	4	—	—	—	—	—	4	—	—	—	1	—	—	—	3	1	—	—
28	—	540	—	422	342	22	34	337	19	2	—	244	1	18	6	288	133	6	2

C.—Cases D.—Deaths

Digitized by Google

CASES AND DEATHS FROM

1921 Litchfield County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Barkhamsted	—	—	19	—	2	—	—	—	—	—	—	—	7	—
Bethlehem	—	—	—	—	—	—	—	—	—	—	—	—	4	—
Bridgewater	—	—	6	—	—	—	—	—	—	—	—	—	—	—
Canaan	—	—	4	—	3	—	—	—	—	—	—	—	—	—
Colebrook	—	—	9	—	—	—	—	—	—	—	—	—	—	—
Cornwall	—	—	—	—	1	—	8	—	3	—	1	—	15	—
Goshen	—	—	—	—	8	—	—	—	—	—	—	—	—	—
Harwinton	—	—	—	—	17	1	—	—	2	1	—	—	—	—
Kent	—	—	—	—	6	—	—	—	—	—	—	1	—	—
Litchfield	—	—	3	—	29	1	—	—	10	1	—	—	16	—
Morris	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New Hartford	1	—	149	3	11	—	3	—	1	—	—	—	25	—
New Milford	1	—	10	—	10	—	—	1	5	—	—	—	—	—
Norfolk	—	—	94	1	—	—	15	—	2	—	—	—	1	—
North Canaan	—	—	140	—	12	—	25	—	3	—	—	—	22	—
Plymouth	2	—	2	—	10	—	—	—	27	2	—	—	12	—
Roxbury	—	—	4	—	—	—	—	—	—	—	—	—	—	—
Salisbury	—	—	3	—	4	—	6	—	8	—	—	—	—	—
Sharon	—	—	5	—	25	—	3	1	2	—	7	1	2	—
Thomaston	—	—	4	—	28	—	1	—	6	—	—	2	—	—
Torrington	—	—	1	—	121	7	1	—	12	1	—	6	—	—
Warren	—	—	30	—	1	—	18	—	—	—	5	—	6	—
Washington	—	—	49	—	1	—	8	—	3	—	4	—	1	—
Watertown	1	—	9	—	14	—	35	—	8	—	4	2	24	—
Winchester	—	—	2	—	41	—	—	—	3	1	—	3	2	—
Woodbury	—	—	—	—	2	—	—	—	1	—	—	—	4	—
Total	5	—	543	4	346	9	123	2	96	6	21	15	141	—

1921 Windham County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Ashford	1	—	1	—	3	—	8	—	2	—	—	—	—	—
Brooklyn	2	—	6	—	2	—	38	2	—	—	—	—	16	—
Canterbury	—	—	4	—	1	—	—	—	1	—	—	—	4	—
Chaplin	—	—	27	1	—	—	—	—	—	—	—	—	—	—
Eastford	—	—	49	—	1	—	—	—	—	—	—	—	15	—
Hampton	—	—	25	—	2	—	14	—	—	—	—	—	4	—
Killingly	—	—	—	—	7	—	3	—	26	1	—	—	1	—
Plainfield	4	1	2	—	8	—	2	—	25	—	—	1	5	—
Pomfret	2	1	22	—	—	—	—	—	2	—	—	—	4	—
Putnam	—	—	4	—	23	1	6	—	11	—	1	4	22	—
Scotland	—	—	13	—	—	—	—	—	—	—	—	—	—	—
Sterling	—	—	—	—	1	—	—	—	1	—	1	—	—	—
Thompson	1	—	18	—	25	1	—	—	15	1	2	1	11	—
Windham	3	—	266	4	38	—	53	4	29	—	1	6	1	—
Woodstock	1	—	1	—	27	—	1	—	1	—	—	—	—	—
Total	14	2	438	5	138	2	125	6	113	2	5	12	83	—

C.—Cases D.—Deaths

Digitized by Google

REPORTABLE DISEASES, 1921

German Measles (19-B)		Mumps (19-C)		Tuberculosis (pulmonary) (28-29)		Tuberculosis (other forms) (30-35)		Syphilis (37)		Conjunctivitis Infectious (38-A)		Gonorrhoea (38-C)		Cerebrospinal Meningitis (61-C)		Pneumonia (lobar) (92-1)		Septic Sore Throat (100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—
1	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	10	—	1	1	—	1	—	—	4	—	—	—	—	—	1	1	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	1	2	—	—	—	—	—	—	—	—	—	—	2	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
—	—	2	—	3	2	—	—	—	—	—	—	—	—	—	—	1	1	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
1	—	—	—	1	—	—	—	6	—	—	—	—	—	—	—	1	1	—	—
—	—	1	—	—	2	—	—	—	—	—	—	—	—	1	—	2	1	—	—
—	—	4	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—
10	—	—	—	1	1	—	—	—	—	40	—	1	—	—	—	1	—	—	—
—	—	9	—	1	2	1	—	3	—	—	—	—	—	—	—	9	4	—	—
—	—	2	—	—	—	—	—	—	—	15	—	—	—	—	—	—	—	—	—
—	—	1	—	2	1	—	—	1	—	—	—	—	—	1	—	1	1	—	—
2	—	10	—	1	1	—	1	1	1	—	—	—	—	—	—	4	2	—	—
—	—	1	—	4	3	—	1	3	—	—	—	—	—	—	—	1	—	—	—
—	—	—	—	1	9	—	2	11	—	—	—	—	—	—	—	2	8	—	—
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	39	—	1	—	—	—	3	—	—	—	5	—	—	—	2	1	—	—
—	—	163	—	3	3	—	1	5	—	59	—	1	—	—	—	4	1	—	—
—	—	1	—	5	2	—	2	14	—	—	—	—	—	—	—	—	5	—	—
—	—	—	—	1	1	—	—	—	—	—	—	3	—	—	—	3	3	—	—
14	—	255	—	28	32	1	8	50	1	118	—	11	—	2	—	36	30	—	—

German Measles (19-B)		Mumps (19-C)		Tuberculosis (pulmonary) (28-29)		Tuberculosis (other forms) (30-35)		Syphilis (37)		Conjunctivitis Infectious (38-A)		Gonorrhoea (38-C)		Cerebrospinal Meningitis (61-C)		Pneumonia (lobar) (92-1)		Septic Sore Throat (100)	
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	8	—	2	2	—	—	1	—	—	—	2	—	—	—	2	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	2	—	—
—	—	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—
—	—	2	—	1	1	—	—	1	—	—	—	1	—	—	—	—	—	—	—
—	—	—	—	20	2	2	—	2	—	—	—	4	—	—	—	8	2	2	1
—	—	2	—	5	2	—	1	2	—	—	—	2	—	1	—	1	—	—	—
—	—	6	—	—	1	—	—	—	—	—	—	—	—	—	—	3	1	—	—
—	—	89	—	8	7	—	—	4	—	—	—	3	—	1	2	2	1	—	—
—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	—	1	—	—
—	—	8	—	3	4	—	—	5	1	—	—	—	—	—	—	5	2	—	—
—	—	5	—	5	6	1	—	31	—	—	—	29	—	—	—	28	14	—	—
—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	1	1	—	—
1	—	132	—	45	27	3	1	46	1	—	—	41	—	4	3	53	24	2	1

C.—Cases D.—Deaths

Digitized by Google

CASES AND DEATHS FROM

1921 Hartford County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Avon	—	—	10	1	14	—	19	—	3	—	—	—	—	—
Berlin	1	1	17	—	6	—	9	—	22	2	1	2	—	—
Bloomfield	1	—	6	—	16	—	—	—	—	—	—	—	—	—
Bristol	1	—	42	—	30	1	10	—	43	2	1	1	63	—
Burlington	—	—	7	—	—	—	—	—	7	2	—	—	—	—
Canton	—	—	111	—	1	—	—	1	2	—	1	1	1	—
East Granby	11	—	3	—	—	—	11	1	1	—	—	—	—	—
East Hartford	11	—	9	—	17	—	6	—	11	1	—	—	8	—
East Windsor	3	—	3	—	22	1	1	—	13	—	1	—	1	—
Enfield	70	1	3	—	22	2	—	3	61	2	—	2	2	—
Farmington	3	—	86	1	19	—	61	1	21	—	2	2	3	—
Glastonbury	—	—	43	—	2	—	5	—	6	—	—	1	—	—
Granby	—	—	1	—	1	—	—	3	1	—	—	—	—	—
Hartford	61	11	360	5	170	12	372	15	430	25	17	10	287	—
Hartland	—	—	5	—	—	—	—	—	—	—	—	—	—	—
Manchester	3	1	52	—	48	—	28	2	15	—	3	2	10	—
Marlborough	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New Britain	13	1	617	6	105	1	101	7	198	10	91	14	98	—
Newington	—	—	3	—	11	—	—	—	5	—	—	1	6	—
Plainville	—	—	2	—	12	—	3	—	10	—	—	—	—	—
Rocky Hill	7	—	12	—	2	—	14	—	24	—	—	—	—	—
Simsbury	1	—	20	—	25	—	—	—	5	—	—	—	6	—
Southington	—	—	2	—	37	—	11	1	23	2	—	—	21	—
South Windsor	—	—	4	—	10	—	3	—	4	—	—	1	3	—
Suffield	1	—	8	—	6	—	35	—	7	1	11	—	38	—
West Hartford	6	—	11	—	16	—	58	2	11	—	—	—	44	—
Wethersfield	1	—	23	—	—	—	6	—	13	1	1	1	12	—
Windsor	1	—	—	—	5	—	30	2	5	—	—	2	2	—
Windsor Locks	1	—	—	—	10	—	—	1	35	5	—	—	—	—
Total	196	15	1,460	13	607	17	783	39	976	53	129	40	605	—

1921 Tolland County	Typhoid Fever (1)		Measles (6)		Scarlet Fever (7)		Whooping Cough (8)		Diphtheria (9)		Influenza (10)		Chickenpox (19-A)	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Andover	—	—	26	—	4	—	—	—	1	—	—	—	—	—
Bolton	—	—	—	—	2	—	—	—	—	—	—	—	—	—
Columbia	—	—	8	1	6	—	—	—	—	—	—	—	—	—
Coventry	—	—	155	—	1	—	—	—	1	—	—	1	6	—
Ellington	—	—	1	—	8	—	1	—	6	1	—	—	—	—
Hebron	—	—	19	—	—	—	—	—	—	—	—	1	—	—
Mansfield	—	—	102	—	8	1	2	—	8	—	—	—	6	—
Somers	—	—	1	—	3	—	25	—	5	—	—	—	8	—
Stafford	—	—	97	—	3	—	—	—	1	—	—	—	2	—
Tolland	—	—	12	—	7	—	8	—	3	—	—	—	2	—
Union	—	—	1	—	—	—	—	—	1	—	—	—	—	—
Vernon	3	—	9	1	8	—	—	1	9	1	—	—	—	—
Willington	—	—	—	—	1	—	15	—	9	1	—	—	5	—
Total	3	—	431	2	51	1	51	1	44	3	—	2	29	—

C.—Cases D.—Deaths

Digitized by Google

REPORTABLE DISEASES, 1921

German Measles (19-B) C.	German Measles (19-B) D.	Mumps (19-C) C.	Mumps (19-C) D.	Tuberculosis (pulmonary) (28-29) C.	Tuberculosis (pulmonary) (28-29) D.	Tuberculosis (other forms) (30-35) C.	Tuberculosis (other forms) (30-35) D.	Syphilis (37) C.	Syphilis (37) D.	Conjunctivitis Infectious (38-A) C.	Conjunctivitis Infectious (38-A) D.	Gonorrhoea (38-C) C.	Gonorrhoea (38-C) D.	Cerebrospinal Meningitis (61-C) C.	Cerebrospinal Meningitis (61-C) D.	Pneumonia (lobar) (92-1) C.	Pneumonia (lobar) (92-1) D.	Septic Sore Throat (100) C.	Septic Sore Throat (100) D.
—	—	1	—	1	—	—	—	2	—	—	—	1	—	—	—	4	1	—	—
2	—	—	—	2	2	—	—	—	—	—	—	—	—	—	—	5	1	—	—
—	—	1	—	2	2	—	—	—	—	—	—	—	—	—	—	—	2	—	—
—	—	7	—	59	8	1	—	31	1	3	—	12	—	3	1	26	4	1	—
—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	2	3	—	—	1	—	—	—	—	—	—	1	—	1	—	—
—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—
—	—	7	—	12	8	—	—	14	—	—	—	6	—	—	—	14	8	—	—
—	—	—	—	1	1	—	1	1	—	—	—	—	—	2	—	—	1	—	—
—	—	—	—	1	4	—	1	3	—	—	—	1	—	—	1	6	6	—	—
—	—	4	—	4	2	—	—	2	—	—	—	1	—	—	—	—	—	—	1
—	—	—	—	—	4	—	—	3	—	—	—	—	—	—	—	1	5	—	—
—	—	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16	—	246	1	185	68	19	34	644	16	—	—	265	1	7	8	112	87	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9	—	—
1	—	33	—	20	8	—	—	38	—	7	—	12	—	—	1	19	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
1	—	92	—	110	25	10	7	66	1	—	—	62	—	6	1	75	15	3	1
—	—	24	—	1	71	—	—	1	—	—	—	—	—	1	—	—	—	—	—
—	—	1	—	3	1	—	—	3	—	—	—	—	—	—	—	1	—	—	—
—	—	—	—	3	1	1	—	3	—	—	—	4	—	—	—	13	4	—	—
—	—	12	—	4	3	—	1	1	—	—	—	—	—	—	—	6	2	—	—
1	—	16	—	12	1	—	—	5	—	—	—	3	—	1	—	8	3	—	—
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	3	—	—
—	—	1	—	3	2	1	1	—	—	—	—	1	—	1	1	4	3	—	—
—	—	27	—	4	4	—	—	3	—	—	—	1	—	—	1	8	3	—	—
—	—	1	—	5	3	—	—	13	—	—	—	4	—	—	—	3	—	—	—
—	—	5	—	2	2	—	—	2	—	—	—	—	—	1	—	4	3	—	—
—	—	—	—	—	1	—	—	2	2	—	—	—	—	—	1	—	2	—	1
21	—	496	1	436	227	32	45	838	20	10	—	374	1	22	16	311	164	4	3

German Measles (19-B) C.	German Measles (19-B) D.	Mumps (19-C) C.	Mumps (19-C) D.	Tuberculosis (pulmonary) (28-29) C.	Tuberculosis (pulmonary) (28-29) D.	Tuberculosis (other forms) (30-35) C.	Tuberculosis (other forms) (30-35) D.	Syphilis (37) C.	Syphilis (37) D.	Conjunctivitis Infectious (38-A) C.	Conjunctivitis Infectious (38-A) D.	Gonorrhoea (38-C) C.	Gonorrhoea (38-C) D.	Cerebrospinal Meningitis (61-C) C.	Cerebrospinal Meningitis (61-C) D.	Pneumonia (lobar) (92-1) C.	Pneumonia (lobar) (92-1) D.	Septic Sore Throat (100) C.	Septic Sore Throat (100) D.
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	6	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—
1	—	4	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
—	—	5	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	3	—	2	2	—	1	9	—	—	—	—	—	—	—	2	1	—	—
—	—	1	—	2	1	—	—	2	—	—	—	3	—	—	1	—	—	—	—
—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	9	4	1	—	4	—	—	—	2	—	—	1	3	3	—	—
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	2	—
1	—	19	—	17	13	1	1	17	—	—	—	5	1	—	2	7	6	2	1

C.—Cases D.—Deaths

Digitized by Google

Digitized by Google

DIVISION OF VENEREAL DISEASES

FOR THE PERIOD ENDING JUNE 30, 1922

Digitized by Google

Digitized by Google

REPORT DIVISION OF VENEREAL DISEASES

To John T. Black, M. D., Commissioner of Health.

Sir: I have the honor to submit herewith the Report of the Division of Venereal Diseases of the Connecticut State Department of Health from the time of its formation to the present date.

Foreword

The World War, not unlike every great war, has brought out the necessity of studying some communicable disease. During the Spanish American War, typhoid fever epidemics with the resultant loss of life showed the necessity of a more thorough study of this disease and methods of preventing it. The greatest results of this study were derived after the war, and so it is with the past World War. Not until this history-making event brought us to our realization did we know the prevalence of venereal diseases.

In combating any communicable disease, the most important steps are the locating of the source of infection, and the prevention of contact.

Syphilis and gonorrhea are no different than any of the other communicable diseases and in order to bring these two diseases under control we must awaken all of the health forces to a realization of the problem confronting them so that the venereal disease menace will be fought in the same well organized manner that is conquering other communicable diseases.

The health department is the nucleus of health activities of the state and should be the stimulating force. It is the medium by which health is brought to the people, and therefore it is the duty of the health department to promote and supervise any and all work that has for its end, a healthy populace.

The task of curing venereal diseases must necessarily be performed by the medical profession. It is important that full and uniform advice be given to all patients, and consequently this department furnishes literature to the physician, which he distributes to his patients. There are many patients suffering with these diseases who are a menace to the community and who cannot afford the long continued treatment by a private physician. These patients are taken care of free of charge by the state, through municipal clinics and treatment stations.

Digitized by Google

Disease is no respecter of sex. This is only too true with regard to venereal diseases—*Venereal Diseases*—those most loathsome of diseases which for centuries have been allowed to inflict their damage on the human race. For years we have fought in the open such diseases as yellow fever, tuberculosis and bubonic plague, while at the same time the so-called social diseases have been undermining our very man power. True, the public did not know of the damages done by these diseases yearly. The people do not realize that in the United States in this year of peace, 1922, more lives than the whole empire of Great Britain lost during any year of the Great War, will be flicked out by these two diseases which are curable and preventable. Nor will the year 1922 stand alone. In the four and a half years of intensive warfare between 1914 and 1918, the fifteen civilized nations which fought the World War gave to these two scourges a heavier toll than they did to bullets, shells, gas, air bombs and all the ghastly wholesale killers of modern battle.

Always before this, syphilis, gonorrhoea and chancroid —that group called venereal diseases because of their commonest method of transmission—would never come under public health control because they were considered "secret" diseases and different than other diseases. Under this assumption, the patient who was infected with one of these diseases was allowed to go on in his misery and neglect, infecting whomever he would, and leaving in his wake countless cases of blindness, childless marriages, invalidism, insanity and wrecked homes. In the days of old, the physician could treat a patient as much or as little as he pleased and the patient could come and go as he pleased. Neither of them were accountable to anyone for the protection of society. The health officer was made to feel that these diseases were different and not within his scope. The feeling was maintained regardless of his brilliant record in conquering yellow fever, malaria, smallpox and typhoid.

Now, thanks to the war, which has shown us the extent of these diseases, the curtain has been raised and the venereal problem is in the glare of the footlights. We are much more enlightened in these diseases at present than a few years ago and are aware of the fact that more than ever before is there need for public health work in this line.

Digitized by Google

Prevalence of Diseases

Whereas gonorrhea is the most prevalent of these diseases, although not shown by Connecticut statistics, syphilis comes foremost to our attention owing to the fact that it causes the greatest amount of suffering and its mortality rate is much greater.

To state a definite numerical quotation of the prevalence of this disease in our country is somewhat of a difficult task as such a survey might show the colored population as being 20% infected while the white population would be much lower. Likewise, the social status has to be considered. If the unskilled labor class showed a fairly high percentage, we could not group the whole population by this figure. In the same manner, the prostitute shows a very high percentage of infection that we could not use in estimating the general public.

A few random quotations as to the prevalence in this country might be of interest before going into the details of the state.

Gerrish, stating that syphilis is one of the commonest diseases, believes that 10% of the community are affected by it.

Fisher is of the opinion that 250,000 deaths occur from venereal diseases yearly and that 18% of the population suffer from syphilis.

Syphilis among prostitutes would naturally be high as a person can not live that life very long before becoming infected.

Kneeland states that with the Wassermann tests, 48% of the inmates of the Bedford Reformatory for girls had syphilis. Walker in an examination of 327 prostitutes in Baltimore found 67% with positive signs of syphilis.

In considering the prevalence of syphilis among the insane, Watson writes that in an examination of 470 inmates of the Oregon State Insane Asylum, nearly 20% gave positive reactions. Paine, out of 200 examinations on admission to Danvers State Hospital in Massachusetts, found 24.5% with a positive Wassermann. Vedder and Hough studying 616 consecutive admissions to Government Hospital for the Insane, Washington, D. C., found 16.72% with positive Wassermann reactions.

Comparable with the above statistics is the result of the survey by the State Department of Health in the institutions of Connecticut. An effort was made to ascertain the

Digitized by Google

institutions of the state that are now making a routine examination for syphilis on all inmates.

The following is a list of institutions and the percentage found with a positive Wassermann test in each:

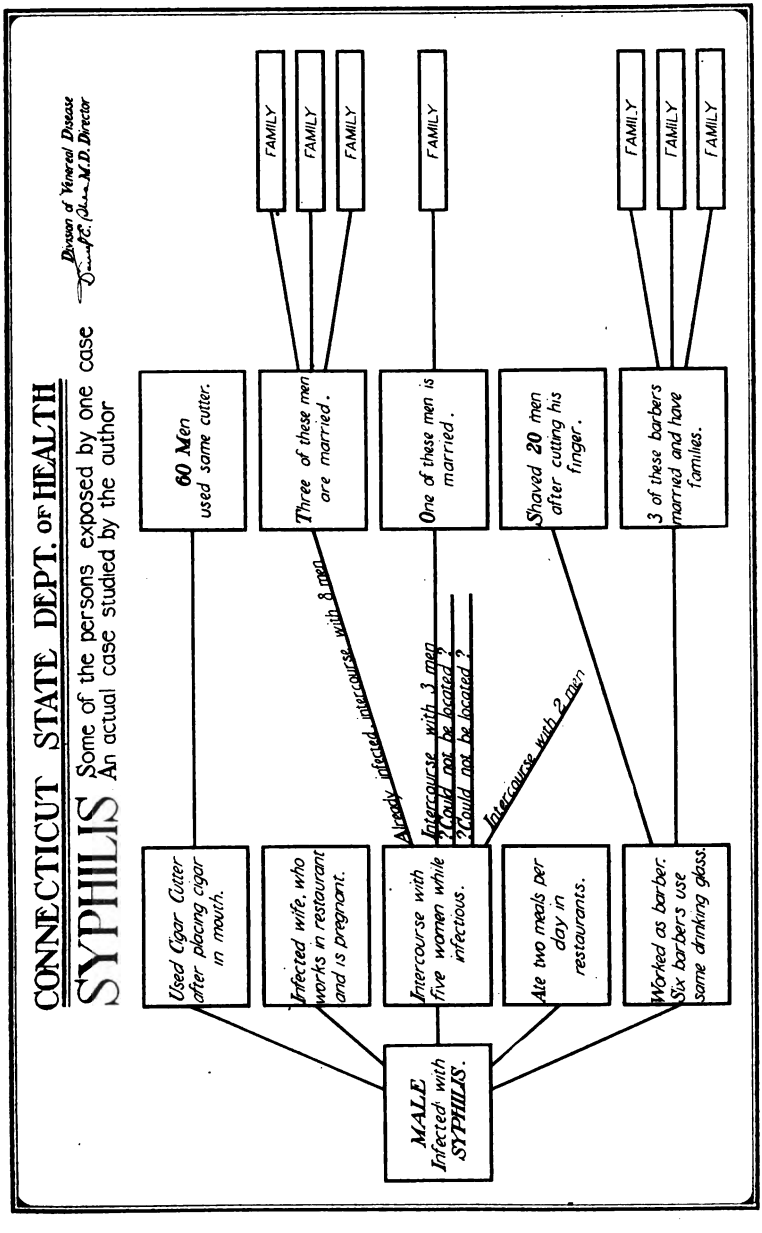
Connecticut Reformatory, Cheshire	3.2%
Industrial School for Girls, Middletown	7.28%
State Hospital for Insane, Norwich	19.0%
State Hospital for Insane, Middletown	14.4%
Mansfield State Training School and Hospital, Mansfield	2.3%
State Prison, Wethersfield	12.3%
State Farm for Women, East Lyme	2.8%

The above institutions are now using the modern antisyphilitic treatment on all their cases.

The patients who are committed to institutions are prevented from exposing the general public and will probably be there until non-infectious at least, if not until they are cured. On the other hand, how about the thousands of cases that are in our midst—those cases that run at large with no restraint? We know that in the year of 1920 there were in Connecticut 2,238 new cases of syphilis and 1,345 cases of gonorrhea, while in 1921 there were reported 2,420 of syphilis and 1,035 of gonorrhea. This information was gained from the reports of the physicians throughout the state. These figures certainly do not show the exact number of cases in the state, as all of the physicians in the state are not reporting these cases. Then again, there are a large number of cases that are not treated by physicians, who through ignorance as to their condition do no seek medical attention.

These cases are allowed to go on, and through various methods of disease transmission are potential foci of infection to the public health. Recently, I put some time in studying one of these cases and the following diagrams will give an idea as to the number of persons exposed by this case:

Digitized by Google


CONNECTICUT STATE DEPT. OF HEALTH
SYPHILIS Some of the persons exposed by one case
An actual case studied by the author
Division of Venereal Disease
M.D. Director
MALE Infected with SYPHILIS.
Used Cigar Cutter after placing cigar in mouth.
Infected wife, who works in restaurant and is pregnant.
Intercourse with five women while infectious.
Ate two meals per day in restaurants.
Worked as barber. Six barbers use same drinking glass.
60 Men used same cutter.
Three of these men are married.
Already infected intercourse with 8 men
One of these men is married.
Intercourse with 3 men ? Could not be located ? ? Could not be located ?
Shaved 20 men after cutting his finger.
Intercourse with 2 men
3 of these barbers married and have families.
FAMILY
FAMILY
FAMILY
FAMILY
FAMILY
FAMILY

Digitized by Google

Seriousness of Venereal Diseases.

Considering the large number of blind in this state who can trace their affliction to gonorrhea, the vast number of pelvic operations on women due to the same cause, the result will offset the small number of deaths from this disease. Syphilis is by far the greater killer of the two. In its fatal tertiary stage, it runs into several well recognized complaints which must be reckoned in the indictment. For example, every case of locomotor ataxia is in origin syphilitic—there is no other cause for this grotesque and terrible affliction. The same is true of paresis. Then there is a definite proportion of other fatal diseases, such as certain varieties of organic brain, heart and kidney diseases which have syphilis as their origin. It is estimated by authorities that syphilis kills annually in the United States 300,000 people. France, we used to say was "bled white" in the war. She lost about 1,350,000 lives by the fatalities of battle. During the four years and four months of the Great War, our tribute to syphilis was about the same as to the Kaiser. It causes year in and year out, two American deaths out of thirteen, leading by a wide margin, tuberculosis, which is next on the list. Pneumonia, the savage slayer of maturity, the gentle reliever of age, and cancer, the dark mystery of science—both give place to syphilis.

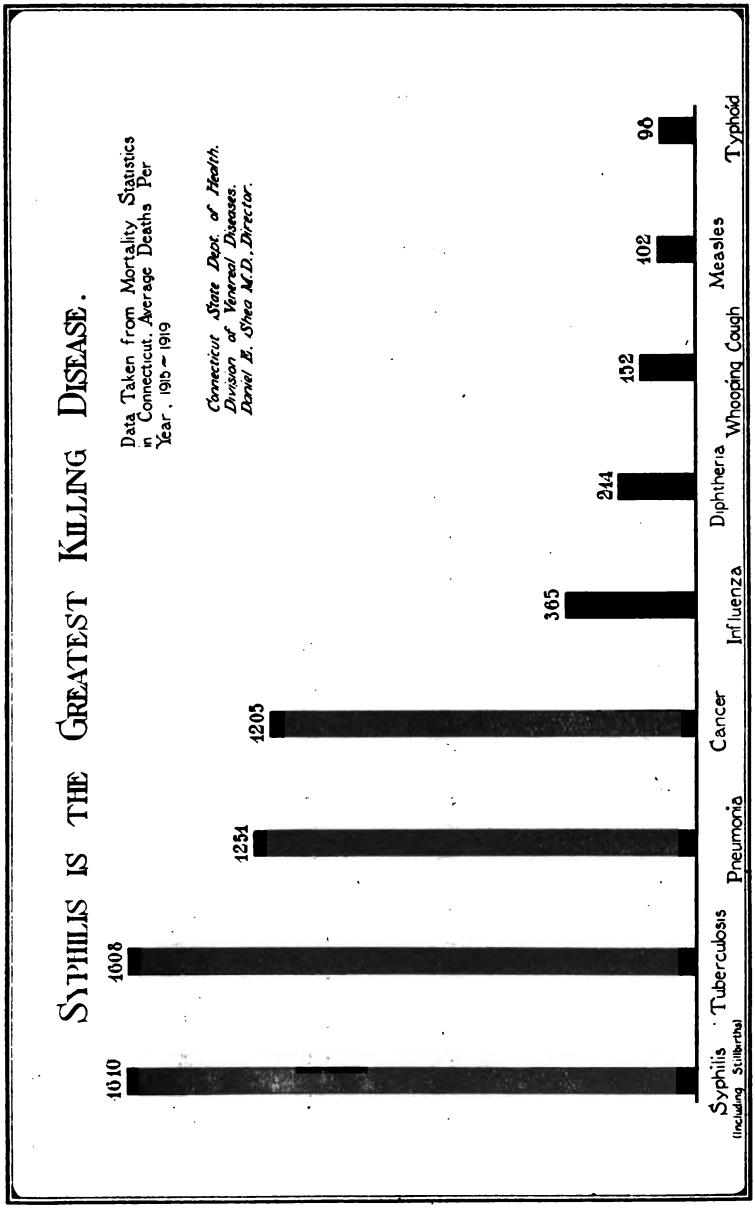
In Connecticut, syphilis has its annual toll as in other parts of the country. The following chart is the result of mortality statistics in the state showing the average deaths per year 1915-1919. This is a very conservative estimate from the Report of the Commissioner of Health, plus 60% of the still births.

Venereal Diseases the Cause of Blindness

That a large percentage of the blindness in this state is due to venereal diseases and that these cases are an economic loss to Connecticut can be seen from the following statement issued by the Board of Education of the Blind.

"The records at the office of the State Board of Education of the Blind show that the percentage of blindness from ophthalmia neonatorum, in the children who come under its observation, is around 20% of the whole number. Thus in 1918 the percentage was 23.8, in 1919, 24, and in 1920, 19.2. It is not likely that all of these cases are of gonorrheal infection, and we do not have any

Digitized by Google

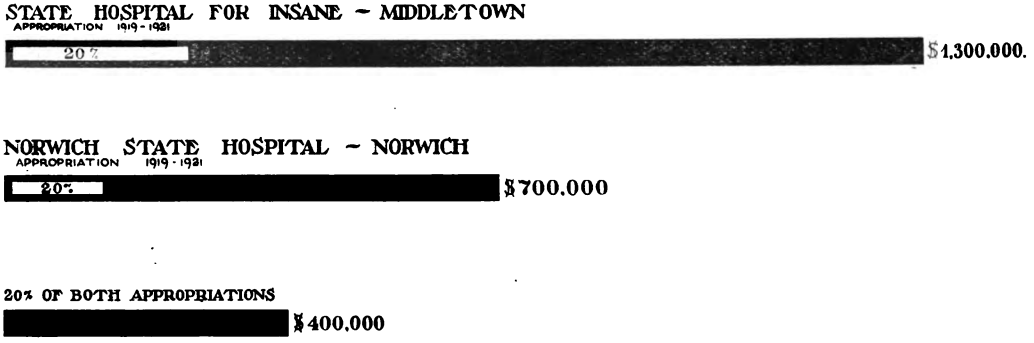


Digitized by Google

Connecticut State Dept. of Health,
Division of Venereal Diseases,
Daniel E. Shea M.D., Director.

Cost of Syphilis in Insane Institutions

20% of Inmates Have Syphilis



Digitized by Google

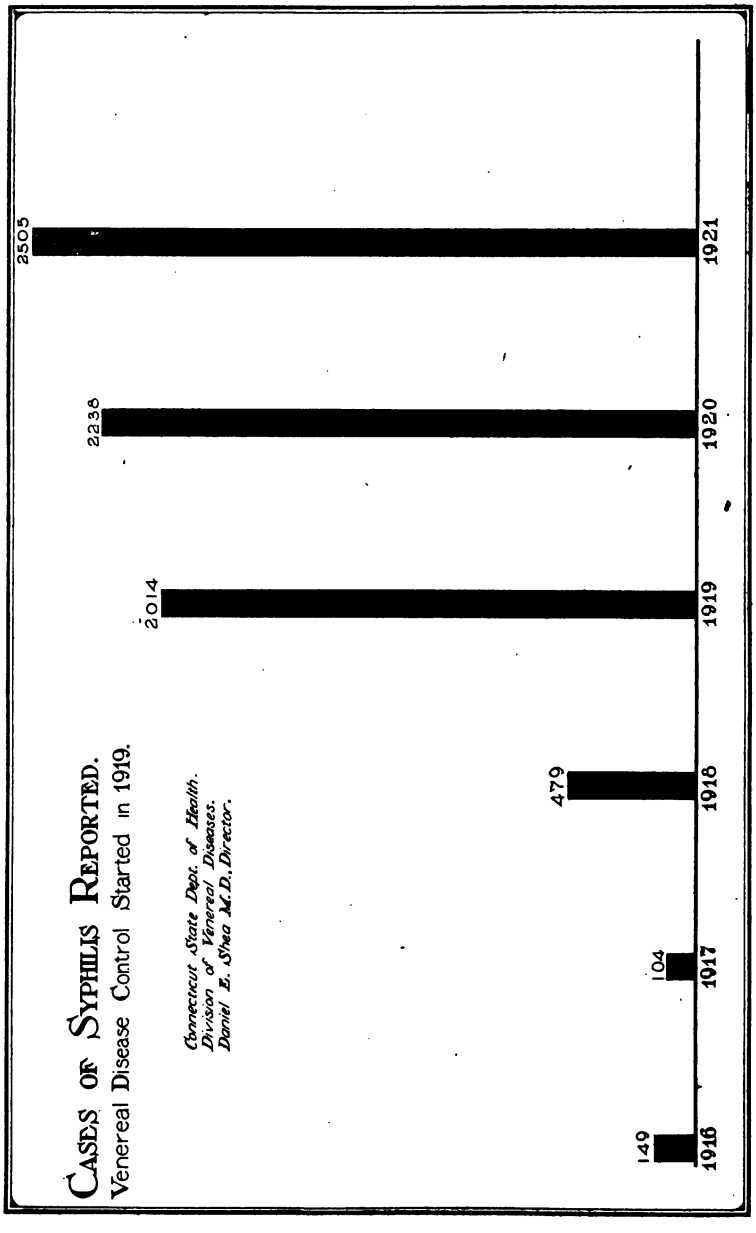
statistics to show just what percentage of the above are of this nature, but we should say, off-hand, probably two-thirds of the cases of ophthalmia of the newly born are probably due to gonococcus infection.

It is interesting to note that the statistics for Connecticut in regard to ophthalmia neonatorum approach very closely the general average for all states where a study has been made. In 1918 the average for all states was 22.8, in Connecticut 23.8; in 1919, general average 22.2, in Connecticut 24; in 1920, general average 25.2, in Connecticut 19.2. There is a startling lack of uniformity in the general statistics which might lead one to question their value for scientific purposes. Thus, in 1918, the figures for ophthalmia neonatorum varied from a low of 5.3 in Nebraska to a high of 50 in Florida and Idaho; in 1919 from a low of 0 in Washington to a high of 50.8 in Missouri; and in 1920 from a low of 2.1 in Oregon to a high of 59 in Mississippi. Without doubt some part of this wide variance is due to lack of uniformity in gathering the statistics and to carelessness in ascribing the cause of blindness. The fact, however, that the Connecticut figures approach so nearly the mean indicates that we have probably approximated the true conditions.

The present year, Connecticut is paying the board and tuition of sixteen persons who cannot see as a result of ophthalmia neonatorum. The total cost of these sixteen cases has been more than $7,000 for the year. This, perhaps, with a slightly increasing ratio each year, since the state is growing in population rather rapidly, might be regarded as the annual cost to Connecticut of educating its children of school age who are blind from ophthalmia neonatorum. This, of course, takes no account of the blind who have reached adult life, who are sightless from this cause, and of the economic loss to the community which results from their handicap.

Going back over the records of this Board for twenty-five years, we have hastily selected at random the names of ten persons who are blind from ophthalmia neonatorum, and have computed what it has cost the state to educate these ten persons. The total amount expended on the ten for educational purposes has been $50,500. The amounts expended on each vary from $4,200 to $5,700. The average number of years employed to educate the group was fourteen. This is accounted for by the fact that the children were taken when they were very young.

Digitized by Google



Digitized by Google

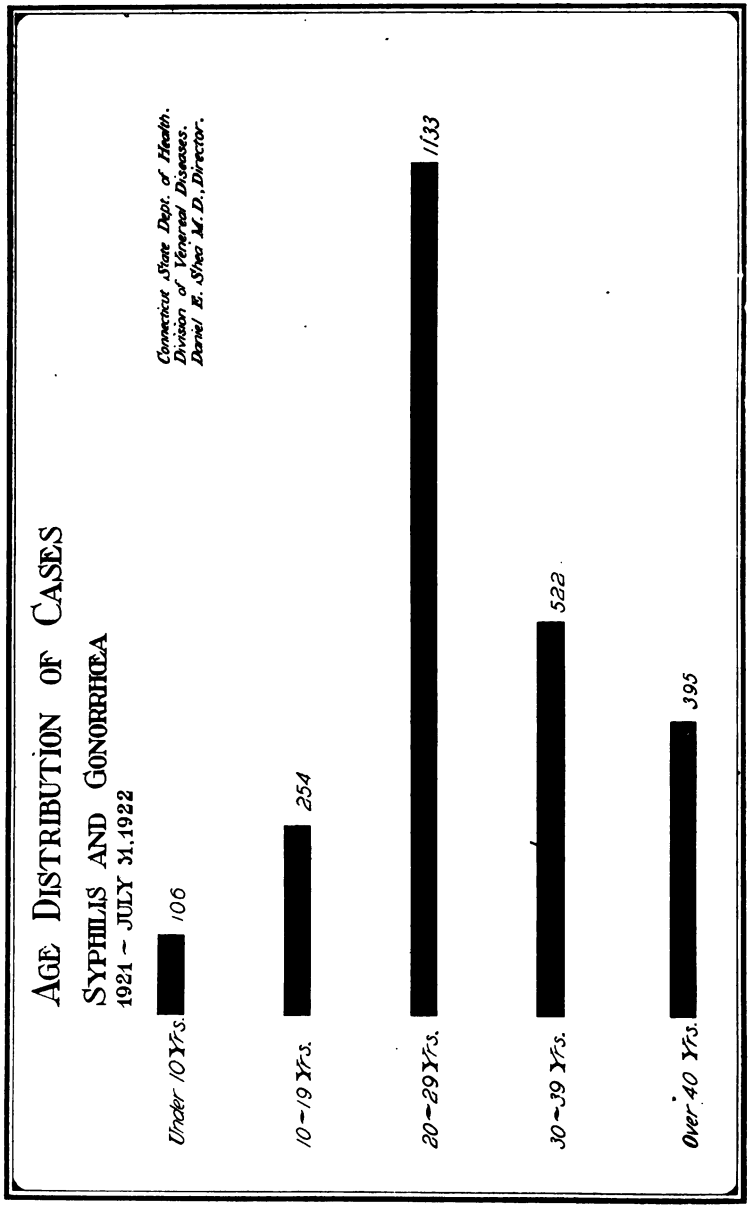
The figures for cases of blindness in which syphilis is the cause are harder to arrive at. Oftentimes the examining physician will make return on our application blank for the cause of blindness as "optic atrophy". A certain proportion of these cases reported as due to optic atrophy undoubtedly have resulted from syphilis. Some form of spinal trouble is frequently returned as the cause. A large proportion of such are also probably due to syphilis. Syphilis, it is known, operates also to produce blindness through affections of the cornea, iris, retina and choroid. A conscientious compiler of statistics is at a loss to know sometimes whether to credit the blindness to syphilis or not. His best judgment might urge him to do it, but such action would mean nothing more than a guess and so he hesitates.

Those who have worked much with the blind can say, however, that acquired syphilis is one of the causes of considerable blindness in the early and middle years of adult life, while hereditary syphilis is one of the chief factors in causing blindness in infancy and early childhood. Probably it would be safe to say that syphilis is a contributing cause in at least from 15 to 20 per cent. of all cases of blindness."

Age Distribution of Cases

One of the most important reasons why we should combat venereal diseases by every possible means, is that they attack the young men of our country and if we are to have a strong, healthy populace we must eradicate the diseases that are flicking out our man-power. The following chart will show the age distribution of cases reported from all sections of the state during 1921 and 1922.

Digitized by Google



Digitized by Google

Controlling the Diseases

We are now brought to face the facts with regard to the prevalence of the diseases. The next step is to control them. In the present age of education and enlightenment, there have sprung up many agencies that have undertaken to educate and reform the people in the hope of controlling the diseases. All these means have been used and certainly have produced remarkable results. They have undoubtedly brought the attention of the public to the menace confronting us. Of course, at times, too much enthusiasm was shown in the work and a consequent adverse criticism was brought about; nevertheless the work was well done and a continuance of the same is needed.

Now, the question arises, is the work really controlling the spread of the disease? Can reform movements and education alone have the desired effect, combined with prophylaxis? Would not a much greater result be obtained if all these cases could be collected and immediate medical treatment be administered? Of course the desired effect would immediately result, because we would render these patients non-infectious so that further spread of the diseases would be impossible. This would be the ideal measure to adopt, but for various reasons it is impossible to bring it about. Whereas we are not able to congregate all the infected people into one group, we can undertake to treat those persons whom we know to be infectious. This great work the Connecticut State Department of Health has been doing and for the past four years has done some praiseworthy work. In co-operation with the U. S. Public Health Service and the departments of health of the various municipalities, there have been organized throughout the state, six clinics and eight treatment stations where persons may be treated for venereal diseases. In organizing these clinics the department of health worked not so much for the interest of the infected persons, although it was they who were most directly concerned, it was the idea of preventative medicine or protection of the general public by eliminating this menace to the public health.

That we were in a measure successful in our endeavor can be deduced from the following figures showing the

Digitized by Google

treatments and cures in these clinics. These figures are for the period ending July, 1922.

New Haven	cured	or	non-infectious,	1,220.	Treatments	29,610
Bridgeport	"	"	"	839	"	27,881
New London	"	"	"	195	"	3,010
Stamford	"	"	"	973	"	5,204
Hartford	"	"	"	706	"	11,039

These figures are of interest to all of us. The smaller towns surrounding these centers contribute their quota. For instance, in New Haven where a clinic that is comparable with any venereal disease clinic in the country is located, they have treated patients from the following places:

Ansonia, Beacon Falls, Branford, Bristol, Bridgeport, Boston, Cheshire, Derby, East Haven, Guilford, Gaylordsville, Hartford, Hamden, Madison, Meriden, Milldale, Middletown, Milford, Naugatuck, New Milford, Orange, Seymour, Stratford, Saybrook, Shelton, Southington, Somers, Wallingford, West Cheshire, Waterbury, Woodbridge and Yalesville.

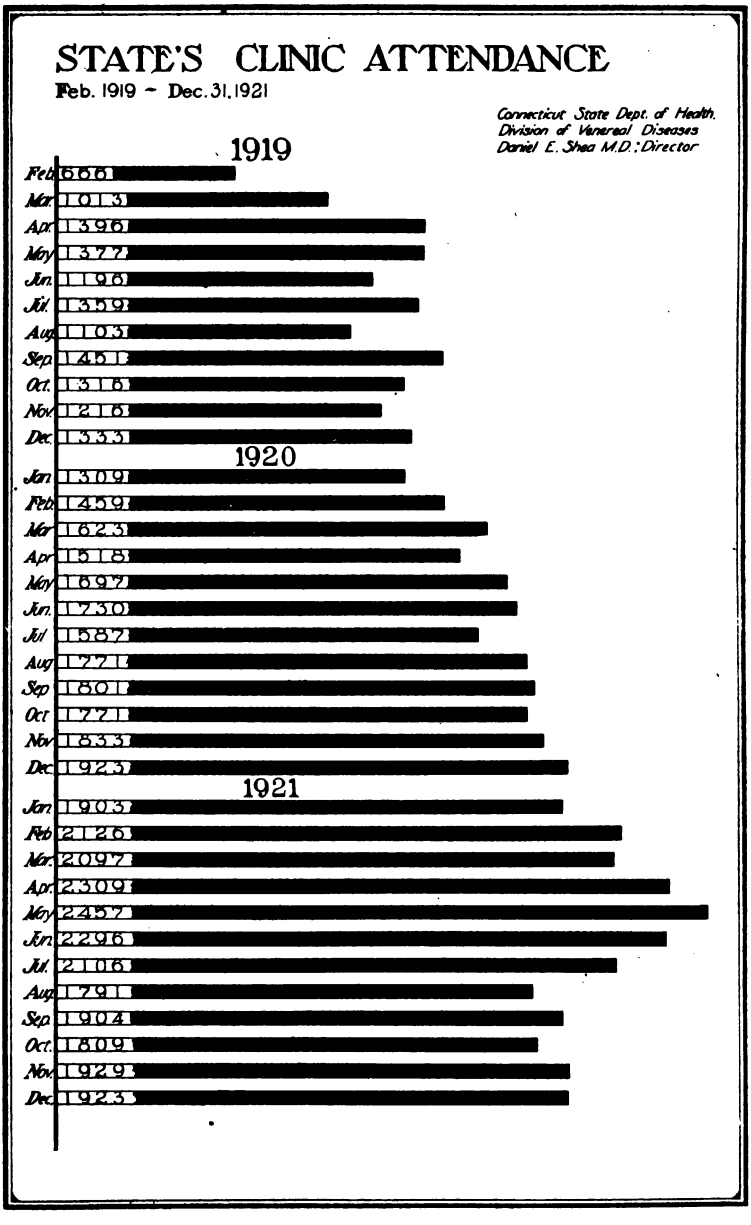
In the same manner the other clinics take care of their respective surrounding communities.

So much for the work already accomplished which the most prejudiced persons will admit is a wonderful achievement. To discontinue this work would be a disaster. Instead, we should become more energetic in our endeavors. Each and every health officer in the state should take an active interest in the work. The health officer should feel that it is just as necessary to take a Wassermann test as to take a diphtheria culture. There was a time when venereal diseases were found only in cities, but to-day, owing to modern methods of travel, the city is brought nearer to the small towns and consequently even the smallest hamlet has its quota of venereal diseases. In the case of those contumacious individuals refusing to be treated, the health officer should use his authority in quarantining the case, if necessary.

Activities of a Clinic

Located at the corner of Arch and Prospect Streets, Hartford, is a well organized Venereal Disease Clinic. In this clinic they have discharged 874 patients as cured and many more ceased treatment after becoming non-infectious. These patients, although unable to pay the fee

Digitized by Google



Digitized by Google

asked by a private physician are engaged in various occupations. The occupational distribution is as follows:

Unskilled Labor	441
Skilled Labor	276
Unable to Work	59
House Workers	51
Chauffeurs	19
Clerical Workers	19
Students	9

Marital State

According to the marital standing of the patients cured at the Hartford Clinic, they are divided as follows:

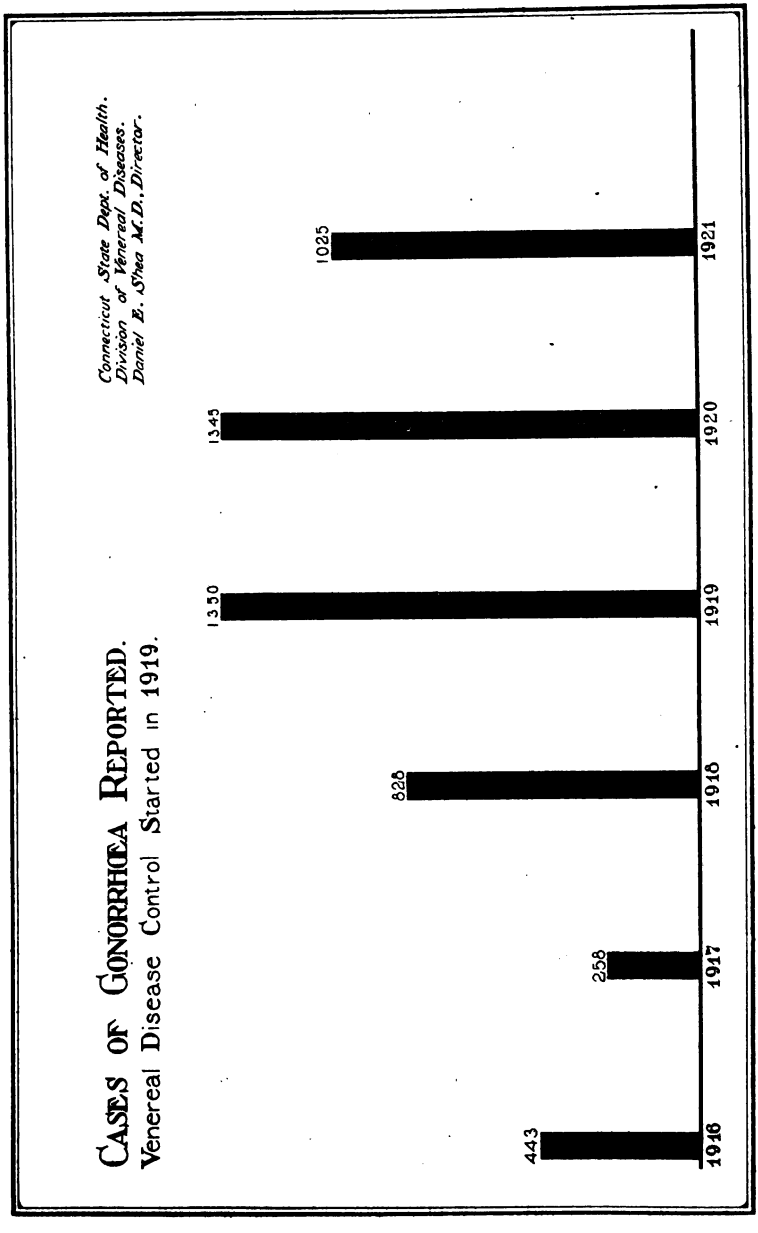
Married—249 Single—605 Widowed—20

Nativity

The following table shows that not only are the large majority of the patients in attendance, of American birth, but it also shows that by means of the clinics, we are carrying out that part of the program of Americanization which pertains to the education of our immigrants in matters of public health. This table is compiled from the records of the 874 patients who were cured in the Board of Health Clinic, Hartford.

United States	615	Spain	3
Italy	92	Armenia	3
Poland	32	France	2
Russia	30	Cape Verde Islands	2
Ireland	16	Scotland	2
Sweden	15	Denmark	2
Lithuania	11	West Indies	1
Portugal	11	Turkey	1
Greece	8	Cuba	1
Canada	8	Chili	1
Austria	5	Galicia	1
England	5	Norway	1
Germany	4	Cyprus	1
		Holland	1

Digitized by Google



Digitized by Google

Cases Entering Clinic

That the educational campaign as carried on in the State has been successful is shown by the fact that not only does it bring venereal disease cases into the clinics, but many cases which are non-venereal, but at the same time resemble them in many respects, come to our attention. These cases are diagnosed and referred to the family physician or to some other clinic. The following table shows a classification of the cases entering the Hartford Clinic up to date:

Disease	*Cases*	*Disease*	*Cases*
Gonorrhea	403	Urticaria	2
Syphilis	240	Psoriasis	1
Non-venereal	184	Dermatitis acuta	1
Prophylactic	8	Masturbator	1
Chancroid	8	Condylomata Acuminata	1
Herpes	3	Veruca Acuminata	1
Furnucolosis	3	Abrasion	1
Acne	2	Phagedenic Chancroid	1
Balanitis	2	Varicose Ulcer	1
Prostatic Adenoma	2	Cystitis	1
Balano Posthitis	2	Incomplete Hernia	1
Tuberculosis of skin	1	Foot Abscess	1
		Variocele	2

According to sex distribution of cases, Hartford shows:

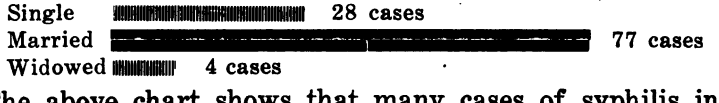
Male	755
Female	119

In the group of feminine cases, we find them divided as follows:

Syphilis	52
Gonorrhea	26
Non-Venereal	29
Prophylactic	2

The above table does not mean that syphilis is more prevalent among the female sex but that gonorrhea is not as easily detected in the female as in the male.

The marital status gives some interesting figures as seen by the distribution of syphilis in the female in the following chart.



The above chart shows that many cases of syphilis in married women are innocently contracted from their husbands, which shows the necessity of some form of procedure to determine if the applicants for marriage certificates are infected with a venereal disease.

Digitized by Google

Treatment Stations

In the smaller towns where the number of cases does not require a clinic, treatment stations have been established. These treatment stations are as a rule located in the office of a private physician so that a case may be referred to the station without any publicity.

The State Department of Health supplies these treatment stations with arsphenamine preparations to be used for these cases. In the same manner, there is a list of approved hospitals and dispensaries which are supplied with this drug, to be administered in selected cases without charge. Below is a list of clinics, treatment stations and approved dispensaries which have been supplied with arsphenamine preparations, and the number of ampules sent them during the present calendar year.

New Haven V. D. Clinic	873	Farmington Treatment Sta.	9
Waterbury "	237	Wethersfield State Prison	113
Stamford "	149	St. Vincents Hospital	6
Bridgeport "	670	Norwich State Hospital	175
Hartford "	500	St. Francis Hospital	20
New Haven Dispensary	420	House of Good Shepherd	10
Hartford Dispensary	420	Terryville, Health Officer	14
Willimantic Treatment Sta.	6	Torrington " "	6
Meriden " "	24	Darien " "	1
New Britain " "	40	Wallingford " "	6
Middletown " "	40		
Putnam " "	40	*Total	3,679

Total number of ampules sent out during 1920 4,385
Total number of ampules sent out during 1921 5,037

*Note—This figure includes the period between January 1st, 1922 and August, 1922.

Resume

In conclusion, I would say that the three factors in a successful venereal disease control campaign are Education, Medical Measures, and Law Enforcement. Each of the three are dependent on the others for success.

The education of the people in the seriousness of the diseases, the recognition of early symptoms, and avoidance of contact will undoubtedly have the same result as in combating any other communicable disease.

Medical measures, which would include administration of prophylaxis as well as the treatment of the disease itself, is probably the most important of the three. I believe that the stamping out of the individual "foci of infection" should be the first consideration. I do not believe that venereal diseases can be controlled by religion, reform movements, or education, although they are valu-

Digitized by Google

able adjuncts. These movements, can not alter the primitive sexual passions implanted in man which are responsible for communication of venereal diseases in a large majority of cases. I feel that if every individual having a venereal disease is placed under intensive medical treatment immediately after contracting the disease, the effect on the morbidity rate of these diseases would be tremendous and if this measure were kept up, within a measurable period of time, the spread of this disease would be largely under control.

The last measure suggested—that of Law Enforcement—is the one that interests most of us as health officers. Our duty is to protect the public. Some of us in our private practice are bound to be interested in the individual from a curative standpoint but regardless, the entire problem should be viewed from a wide angle and the welfare of all must be considered before the welfare of the individual. The patient should be kept under treatment, contacts examined, and infected persons quarantined when necessary.

Another important duty of the local health officer should be the reporting of venereal diseases. Too much can not be said as to the importance of the statistics made available from this source. The health officer should redouble his efforts in securing the reports of these cases from physicians. As you all know, statistics are to public health work what the observation balloon is to the Army, and the American people when shown authentic facts and figures will get behind the movement.

Respectfully submitted,

DANIEL E. SHEA M. D.

Chief of Division of Venereal Diseases.

Digitized by Google

DIVISION OF MENTAL HYGEINE

July 1, 1921--June, 30, 2922

Digitized by Google

Digitized by Google

REPORT DIVISION OF MENTAL HYGIENE

Dr. John T. Black, Commissioner,
Connecticut Department of Health,
Hartford, Conn.

Sir: As Supervisor of the Division of Mental Hygiene of the Department of Health, I wish to tender you a report of the work of the Division during the past year.

The active work of the Mental Hygiene Division was not commenced until October, 1921. The interim between July and October was used in consulting leading psychiatrists, public health men and mental hygienists as to the best method of putting into effect the program which we had decided upon. It was agreed by all that the small appropriation of $3,000 a year which we had received from the Legislature would not enable us to do much more than make a demonstration of the need of a mental hygiene division in the Department of Health. As you remember, in my report of a year ago, I pointed out that several pieces of work of a mental hygiene nature fell in the province of the State Department of Health. I suggested that there was a great need that a survey be made in Connecticut in regard to social inadequacy and the part that mental disease played in causing such inadequacy. Our limited funds prevented us from carrying out this piece of work as we should like, but the Division has prepared and sent to you a chart showing the relation of the Connecticut State Government to social inadequacy and the relation of mental disease to the latter. This chart was exhibited at the International Conference of Eugenics in New York and received favorable comment there to such an extent that we were awarded a certificate of appreciation.

The second suggestion I made at that time was that the Division of Mental Hygiene could well carry on an educational campaign as to the nature of mental disease. We were again limited in this work inasmuch as we did not have sufficient funds to purchase and send out necessary publicity.

We, therefore, decided to take up a special piece of work conducted in conjunction with the state hospitals at Middletown and Norwich and the Connecticut Society for Mental Hygiene. This latter organization, in order to enable us to use all of our funds in carrying out this

Digitized by Google

piece of work, gave us the use of their office, telephone facilities and stenographic force without charge.

On October 1, 1922, the Division employed Mrs. Helen K. Satterthwaite of New Haven, a trained psychiatric social worker to supervise a limited number of more or less acute and yet convalescing state hospital patients who, we felt, could be paroled to the community to an advantage both to the patient and to the hospital, and it is on the result of this work that I wish to report.

Between October 1, 1921 and June 30, 1922, the Division of Mental Hygiene had referred to it from the state hospitals 90 patients. These patients could not well be handled by the ordinary parole facilities of the state hospitals due to special problems involved in their individual cases and, had they not been cared for by this Division, the majority of them would have had to remain in the state hospital. Of the number referred to us, after making very careful and time-consuming investigations, the Division accepted 48 for supervision. Of the number which have been under our supervision, 11 were returned to the state hospitals for further treatment as we found they could not adjust themselves to their environment even with the most careful attention which we gave them. This, however, leaves 37 or 77 per cent. whom we looked after and, I thought I would mention the fact that only approximately 33% paroled from a state hospital under the hospital parole system remain in the community, thus showing the advantage of the very intense medical and social supervision which our patients received.

We have at the present time 36 patients who are receiving our attention. You will notice that this is a distinct financial saving to the state of Connecticut for if we can take care, as we have demonstrated, of 36 patients on an expenditure of $3,000 a year, we are saving the State $11,600 (figured on the hospital per capita yearly.) We should also take into account the fact that many of these patients seem to improve, after a period of hospitalization, much more rapidly in the community than they do in the hospital. I believe that we have shown the hospitals what intense supervision will do for patients in the community and they have, in the meantime, instituted more adequate parole facilities, therefore, it is my opinion that this demonstration should be considered closed and that the state hospitals should carry on this work.

Digitized by Google

During the past year, the Division of Mental Hygiene has spent approximately one-half of the $6,000 appropriation allowed it for a period of two years by the Legislature. It is my opinion that the remainder of the appropriation should be used in disseminating throughout the State publicity in regard to the nature of mental disease, the need of psychopathic hospitals in the State, the necessity for community treatment of mental disease and the need of treating mental disorders in their incipiency. I believe that this can best be handled from the Hartford office of the Department of Health and, therefore, I have tendered you my resignation as Director of this Division, hoping that you will see fit to carry on such work as you may deem best, utilizing the advice and services of the able psychiatrists in Hartford.

In conclusion I wish to reiterate what I often said, that I consider Mental Hygiene essentially a public health movement and not to be confused with welfare or educational issues. As I look over the history of the treatment of mental disease in the United States, I see that we have passed through two distinct phases comparable to similar phases of this movement, such as the anti-tuberculosis work. The first was a phase of inadequate community care of mental patients and this has been followed by a phase of hospitalization of all mental patients. We are now entering on the third phase, namely, one of hospitalization of mentally diseased patients in the incipiency of their disorder, to be followed by community care of these patients as soon as their mal-adjustment has sufficiently subsided to enable them to return to the community.

Respectfully submitted,

WM. B. TERHUNE, M. D.,

Chief, Division of Mental Hygiene.

Digitized by Google

Digitized by Google

BUREAU OF LABORATORIES

July 1, 1920--June 30, 1921

Digitized by Google

Digitized by Google

REPORT OF THE BUREAU OF LABORATORIES

To John T. Black, Commissioner of Health:

The following is the report of the Bureau of Laboratories for the year ending June 30, 1921.

Laboratory Conditions

The laboratory conditions are similar to those described in the two preceding reports of this department and no repetition of them is here necessary. They are entirely inadequate and the work has developed to the full extent of the space which is available. It does not appear possible to meet an increase in the amount of work done to any further extent in the present quarters. The need for improved laboratory conditions was fully explained to the committee of the General Assembly having in charge further provisions for this work and it was expected that an additional appropriation would be secured sufficient, together with that provided two years ago, to furnish suitable accommodations for this part of the State's public health work. The appropriation, however, was not forthcoming and the amount provided for the routine work of the Laboratory is not sufficient to permit of securing larger quarters elsewhere. The Committee on Appropriations of the General Assembly was fully informed of the outcome if more ample accommodations could not be secured; namely, that it would be impossible to meet the increased demand for work, that some part of the work would have to be discontinued, that this necessarily meant that the Laboratory would be unable to do its full part in preventing sickness and death. The responsibility for this inability is, therefore, to be placed squarely on those who were responsible for the lack in providing necessary funds.

In order to utilize the amount that is available for routine work; namely, $25,000 a year, to the best advantage it appears wise to discontinue some of the relatively less important work in order to meet the increased demands in the part which is most important from the standpoint of prevention of disease. The chemical examination of water seems to be that part which can be dispensed with with the least harm from the standpoint of public health. While this was the earliest part of the laboratory work in point of time it has become surpassed in importance by the work done in the diagnostic part of the Laboratory and the space and time necessary for the chemical work on the

Digitized by Google

samples of water submitted for examination can be better utilized for other parts of the work. The Director would, accordingly, recommend that this part of the work be discontinued unless other arrangements than those which now appear can be made to provide for it. The bacteriological examination of water can be continued or even very materially increased in amount and the space devoted to diagnostic work so increased that the demand for the next year or two in this department can probably be met.

In connection with the discussion of appropriations it should be noted that the sum of $10,000 was provided for the next two years for establishing branch laboratories or making arrangements with other laboratories to make certain examinations for the State Department of Health. As this will probably be used in connection with the examination of specimens for diphtheria, or possibly in part for the examination of samples of milk, it will be considered under those topics.

Laboratory Staff

The staff at the Laboratory at present consists of eleven full time workers and one part time worker, in addition to the Director. They are as follows: Mr. P. E. Bransfield, B. A., in general charge of the diagnostic and chemical departments; Miss M. Louise Butler, B. A., serologist; Miss E. Louise Smeallie, B. S., assistant chemist; Miss Pauline E. Tucker, stenographer; Miss Margaret E. MacEwan, assistant bacteriologist; Miss Kathryn R. Tirrell, B. A., assistant serologist; Miss Elizabeth V. Nagy, B. A., (part time) assistant bacteriologist; Miss Florence E. Norton, assistant in chemical department; Miss Catherine A. Malone, clerical assistant; Miss N. T. Connell, Miss Theresa Casey, and Mr. Irving Goldbaum, laboratory employees.

Complaints

Occasionally complaints reach the Laboratory regarding the examination of specimens. The Director wishes to urge anyone sending specimens to the Laboratory to write to him personally whenever he feels there is any cause for complaint. It is only by a knowledge that there is cause for complaint and by a study of the conditions that give rise to this that the work of the Laboratory can be kept up to the hoped-for standard. The complaints thus far received have to do chiefly with two features of the work, delay in receiving reports on speci-

Digitized by Google

mens and breakage of Wassermann specimens in the mail. In regard to the first of these, the trouble has almost invariably been due to delay in receiving the specimen. Every specimen is stamped when received and as the sender is also supposed to enter on the card the date of taking the specimen we are able in the case of each specimen to determine the length of time which has elapsed between the taking of the specimen and its receipt at the Laboratory. Not infrequently this period is two or three days or even longer. Repeated efforts have been made to improve these conditions but so far without complete success, as the causes are beyond the control of the Laboratory. While such delays are relatively infrequent compared with the total number of specimens received, they are not only provoking but at times, particularly in the case of diphtheria cultures, of great importance. In this connection it should be stated, however, that the local post office has in every way attempted to improve conditions when those which were unsatisfactory have been called to its attention. The Director of the Laboratory wishes to express his appreciation for the continued assistance so readily shown by the officials in this post office.

Breakage of Wassermann specimens in transit will be discussed later in this report.

Amount of Laboratory Work

As shown by Table No. II, (page 245,) which gives the number of specimens examined annually for ten years, it is evident that the work has increased very materially during the past year.

Digitized by Google

As shown by this table, the increase for the year is 9643. The total number of specimens is about 28% more than the number received in 1919-1920. The per cent. of increase has been practically the same in both the diagnostic and chemical departments. As evident from the table, the chief numerical increase has been in the number of Wassermann specimens, from 10,394 in 1919-20 to 13,511 in 1920-1921, an increase of 3,162; and in the number of cultures to be examined for diphtheria, from 16,318 in 1919-20 to 20,944 in 1920-1921, an increase of 4,646. There is no reason to assume that this increase will not continue indefinitely in the future and the laboratory facilities should be sufficient to meet such increase. It is not practical to place any limit upon the number of specimens of any one kind which the laboratory can examine. It must be in a position to meet the entire legitimate demand for the examination of specimens of any particular kind or must admit frankly that it is unable to make these examinations at all. The readjustment of the work proposed above will provide for meeting the increase in the diagnostic work as well as continuing the milk work and the bacteriological examination of water for the next two-year period, provided such increase is not more than is now anticipated. If the increase should materially exceed this it may become necessary to drop other lines of work temporarily until new quarters are eventually provided for.

Conserving Laboratory Outfits

As was done in the last Annual Report, it seems advisable to again emphasize the need of conserving laboratory outfits which are sent to individual physicians and to institutions. In spite of the accurate record kept by the Laboratory of outfits sent out and of those returned the loss in the number of outfits is much greater than it reasonably should be. Repeatedly requests come for outfits from physicians or institutions who should have a number of them on hand. In such cases inquiry shows that these outfits have in some way disappeared; in other words, have been lost or used for other purposes than to send specimens to this Laboratory. This means a continued heavy drain upon the limited resources of the Laboratory and physicians can materially aid in conserving these resources by more carefully caring for the outfits which are sent to them. In all cases, with a very few exceptions, it is the rule of the Laboratory to return a container for each one that is received. In this way the supply which each physician has on hand should be kept up.

Digitized by Google

Table II—Summary of Work Done in the Diagnostic Department of the Laboratory by Months

1920-1921	Typhoid	Paratyphoid A	Paratyphoid B	Diphtheria	Diphtheria Carriers	Diphtheria Virulence	Tuberculosis	Syphilis	Gonorrhoea	Glanders	Pneumonia	Malaria	Rabies	Feces for Typhoid	Urine for Typhoid	Special	Total
July	52	52	52	372	.....	1	150	890	63	..	....	3	3	9	2	....	1,649
Aug.	99	99	99	358	.....	2	98	838	57	2	....	7	1	11	1	2	1,674
Sept.	140	140	140	368	.....	4	101	942	76	..	....	10	3	13	8	1	1,946
Oct.	69	69	69	795	202	6	109	1,103	73	..	2	7	....	23	....	3	2,530
Nov.	66	66	66	1,496	2,285	3	122	940	82	..	5	5	2	11	3	1	5,153
Dec.	155	155	155	2,116	1,573	24	134	1,204	50	1	5	....	5	12	6	1	5,596
Jan.	73	73	73	2,200	1,267	13	114	1,102	64	..	3	....	....	25	19	2	5,028
Feb.	120	120	120	1,368	2,129	4	149	1,237	72	..	3	4	5	32	15	1	5,379
Mar.	108	108	108	1,126	500	8	133	1,504	78	..	9	2	3	37	19	1	3,744
Apr.	98	98	98	710	332	10	150	1,469	73	..	4	5	2	26	19	....	3,094
May	81	81	81	1,013	218	4	130	1,141	61	1	7	2	1	17	10	1	2,849
June	66	66	66	514	2	1	136	1,141	47	..	2	10	4	9	1	2	2,067
Totals	1,127	1,127	1,127	12,436	8,508	80	1,526	13,511	796	4	40	55	29	225	103	15	40,709

Digitized by Google

Routine Work of the Diagnostic Department

Table No. II shows the routine work of the Diagnostic Department of the Laboratory by months during the past year.

The great monthly variation in the number of specimens received is well shown by this table. Thus during the first three months of this period the specimens received each month were between 1,500 and 2,000. During the months of November, December, January, and February they were constantly over 5,000 per month and during the following four months there were again a marked decrease. In other words, the Laboratory had to be equipped with diagnosticians sufficient for the examination of the larger number of specimens, as it is usually impossible to secure assistants temporarily who are competent to carry on diagnostic work. This means that during the months when the work is heavy the regular assistants are compelled to put in much overtime. Otherwise, the demand could not be met. Fortunately, the smallest amount of work comes during the summer period and enables the staff to arrange for vacation periods without employing additional assistants.

Typhoid and Paratyphoid

Table III—Specimens Examined for Typhoid and Paratyphoid

1920-21	Positive	Negative	Questionable	Total
Typhoid	102	966	59	1,127
Paratyphoid A	.....	1,124	3	1,127
Paratyphoid B	6	1,115	6	1,127
Total	108	3,205	68	3,381

As indicated by Table III, the agglutination test with paratyphoid bacillus A and B is made on all specimens received for the Widal test. Occasionally the infection is found to be with the paratyphoid B bacillus instead of with the typhoid bacillus.

As shown by the table, the number of specimens received this year has been much higher than those received the previous year. This is largely due to a search for typhoid carriers in one of the State institutions, though aside from that there has also been considerable increase. This is to be accounted for by the energetic work being done by the Director of the Bureau of Preventable Diseases in connection with the study of typhoid fever in the State.

As the Director of the Laboratory is occasionally asked the significance of a report that the Widal test is "par-

Digitized by Google

tially positive" it may be wise to repeat what was said in this connection in the last annual report. When the test shows some clumping but when the clumping and loss of motility is not complete the reaction is reported as partial. This is not to be considered as sufficient to give the diagnosis of typhoid fever. In all such cases a second specimen taken a few days later should be sent and if the disease is typhoid fever the test should have become positive. Partial positive Widal reactions taken by themselves are of no value. They may result from infections by other organisms than the typhoid bacillus. Reports of partial positive reaction are only sent out because of their significance when taken in connection with stronger positive reaction on specimens sent in later from the same patient.

The number of specimens of feces and urine sent to the Laboratory for the examination of typhoid bacilli shows a very marked increase over those previously received. The number of these is shown in Table IV.

Table IV—Specimens of Feces and Urine Examined for Typhoid

1920-21	Positive	Negative	Questionable	Total
Feces	7	218	——	225
Urine	4	99	——	103
Total	11	317	——	308

While many of these have been received from institutions where a search has been made for typhoid carriers, a considerable number has been received from different parts of the State. This is interpreted as meaning that the importance of examining stools and urine not only in the case of suspected carriers but also before discharging patients convalescent from typhoid fever is now more generally recognized. It should become a fixed rule on the part of every physician to determine by bacteriological methods that the patient is free from the typhoid bacillus as shown by the examination of both the urine and feces before he is discharged by the physician as cured; or at least, if the person is not free from typhoid bacilli, that he may be reported to the State Department of Health as a temporary carrier and in that way kept under observation.

The Laboratory is prepared to send containers to any physician desiring them for securing samples of feces and urine for this examination.

Digitized by Google

Diphtheria

Table V—Specimens Examined for Diphtheria

1920-21	Diagnosis +	—	?	Total	Release +	—	?	Total	Total
Individual	1,499	5,299	—	6,798	1,825	3,813	—	5,683	12,436
Carriers	748	6,987	—	7,735	176	597	—	773	8,508
Total	2,247	12,286	—	14,533	2,001	4,410	—	6,411	20,944

Table V shows the number of specimens examined for diphtheria during the year under consideration. As shown in this table, these have been divided into those received for diagnosis, those examined for release, and those examined in the search for carriers. The marked increase in the number received during the past year as compared with the preceding year has already been remarked on. This amounted to 28+%.

The chief difficulty encountered in this part of the work is the occasional delay which occurs between the time a specimen is mailed and the time it is received at this Laboratory. Occasionally this is so great as to render the diagnostic help of the Laboratory of practically no value from the standpoint of treatment in certain cases. There would seem to be no excuse for such delay in as small a State of Connecticut. A specimen mailed in the early part of the day from any part of the State should reach the New Haven Post Office by the early part of the evening at the latest, and diphtheria cultures are routinely collected from the post office after eight o'clock each evening and at once incubated in order to be reported upon the following morning. The fact remains, however, that in spite of the care of physicians in promptly sending specimens and of the Laboratory in having them promptly cared for, occasionally a delay does occur. As indicated above, a small appropriation, $5,000 a year for the next two years, was granted by the last General Assembly to enable the State Department of Health to either establish small branch laboratories or make arrangements with other laboratories for the examination of certain specimens. The sum is insufficient to do more than make a beginning, for work of this nature. It will be utilized chiefly in providing for the examination of diphtheria cultures in laboratories more accessible to certain parts of the State than is the State Laboratory. The difficulty arises that at present in some parts of the State where such facilities are most needed there are at present no available laboratories and the expense of establishing and maintaining laboratories can be

Digitized by Google

met only partially by State funds. It is hoped, however, that this may be only the first step towards providing easily accessible and thoroughly dependable laboratory facilities for the examination of diphtheria cultures in all parts of the State so that in this disease, where an early diagnosis is such a very important factor, delay in securing reports on cultures may be decreased in so far as is possible.

For a considerable period this Laboratory has urged that cultures for diagnosis be taken in all cases both from nose and throat. In addition to this, in order to secure as exact results as possible, it has for a considerable period been the routine in this Laboratory not only to examine the cultures planted on the blood serum by the physician taking the specimen but also to make a duplicate culture from each swab for diagnosis or for release, after the specimen reaches the Laboratory. This duplicates the work in each case and accordingly makes nearly twice as many examinations as are recorded in the table under the heading of Individual both for diagnosis and release. We have not felt justified in omitting this procedure, in spite of the large amount of work it entails, because it not infrequently happens that one of the cultures, either that planted by the physician or that planted by the Laboratory gives positive results, while the duplicate gives negative results. If each individual culture thus examined was included in the table it would make the total number of specimens over 12,000 more than is given in the above table.

Diphtheria Virulence

Table VI—Specimens Examined for Diphtheria Virulence

	Positive	Negative	Questionable	Total
1920-21	40	40	—	80

The number of specimens examined for diphtheria virulence is less this year than during the past year. This is largely due to the inability of the Laboratory thus far to carry on this work to the extent which its importance justifies. The greatest demand for it naturally comes during the period of year when the general work of the Laboratory is heaviest. It is hoped that in the near future it may be possible to emphasize this work to a greater extent.

Digitized by Google

Tuberculosis

Table VII—Specimens Examined for Tuberculosis

1920-21	Positive	Negative	Questionable	Total
	288	1,238	—	1,526

For some reason not evident the number of specimens of sputum examined for tubercle bacilli has shown a considerable decrease during the past year as compared with the preceding year. This amounts to 25+%. It is, perhaps, wise to again emphasize the fact that in any suspected case of tuberculosis a single examination of sputum, if the result is negative, should never be accepted as conclusive. In all such cases repeated examinations should be made.

Syphilis

Table VIII—Specimens Examined for Syphilis

1920-21	Positive	Negative	Questionable	Total
	2,365	10,234	912	13,511

Table VIII shows the number of specimens examined for syphilis during the past year. The increase in the number of these specimens as compared with any preceding year is very satisfactory. 3,162 more specimens were examined for syphilis in 1920-21 than for the preceding year. The average has been over 250 specimens a week for the entire year and at one time over 400 specimens were received in one week. This may be accepted as evidence of the value which the physicians of the State are attaching to this work as done in the State Laboratory. In spite of this large number, however, it is probable that several times that many should be sent for this purpose.

The examination of spinal fluid in this Laboratory has up to the present been limited to the Wassermann test. We have hoped to be able to do the Colloidal Gold test but thus far have not been able to do so. This test is so simple and requires such a small amount of time and space that the Director still hopes to be able to add it in the near future.

The Wassermann test as carried out here includes, in the case of each specimen, the use of two different antigens. We have come to rely upon a plain alcoholic extract of beef heart and the same extract fortified with cholesterin as antigens which have given us satisfactory results. The icebox method of fixation is used with both antigens. With the plain alcoholic extract antigen the period of fixation is

Digitized by Google

over night. With the cholesterinized antigen the period of fixation in the icebox is two hours. From our own experimental work we are satisfied that this method of fixation is not unduly sensitive but that it is more accurate than fixation at 37° centigrade. As a rule the test with each of these antigens gives practically the same results. When there is any discrepancy in the results obtained with the two antigens the test is again repeated with both antigens in order to verify the result before the report is sent out. This at times causes a certain amount of delay in the report on the specimen but we have felt that the delay was justifiable when it was necessary from the standpoint of increased accuracy.

The breakage which occurs in the mails in the case of specimens sent for the Wassermann test is most provoking to the physician sending the specimen and unsatisfactory from the Laboratory standpoint. Various attempts have been made to overcome this and it has been materially lessened in amount. The latest attempt has been to request physicians not to return the Wassermann needle with the bottle of blood, as it was felt that in some cases at least the needle hitting against the bottle might be the cause of breakage. It was found in Laboratory tests that containers thrown with the same amount of force were much more often broken when the needle was in the container than when the needle was not present. Any suggestions regarding the way in which this breakage may be lessened or entirely done away with will be welcomed.

At times specimens reach the Laboratory too completely hemolyzed to be suitable for the Wassermann test. This is most often due to delay in the mail and the consequent decomposition of the blood. It has, therefore, become the rule in the Laboratory to report such specimens as decomposed, even though the process may not have been one strictly of decomposition. Whenever such a report is received by a physician it is to be interpreted as meaning that the specimen is unsuited for the Wassermann test because of hemolysis.

Digitized by Google

Gonorrhoea

Table IX—Specimens Examined for Gonorrhoea

1920-21	Positive	Negative	Questionable	Total
	122	674	—	796

The number of specimens received for examination for gonococci during the past year shows a slight decrease over those received for the preceding year. This is striking in contrast with the marked increase in the number of specimens received for the Wassermann test and presumably is only temporary. A larger number for the next twelve-month period is anticipated.

Glanders

Table X—Specimens Examined for Glanders

1920-21	Positive	Negative	Questionable	Total
	—	2	2	4

If the decrease in the number of specimens of blood received for examination for glanders continues, this table can be well omitted in the next Annual Report. In contrast to the 85 specimens received in the year 1919-20 only 4 specimens have been received during the entire year under consideration.

Pneumonia

Table XI—Specimens Examined for Pneumonia

1920-21	Type I	Type II	Type III	Type IV	?	—	Total
	—	3	3	27	1	6	40

As heretofore, the Laboratory has had only a very moderate number of specimens to examine for the differentiation of pneumococci. In view of the large number of cases of pneumonia occurring annually in this State it was expected that a much larger demand would be made upon the Laboratory for this work. The number of specimens is practically the same as the preceding year. Apparently as yet the physicians of the State who make use of this Laboratory for diagnostic work have not come to rely upon the use of antipneumococcus serum in treatment of this disease.

Digitized by Google

Malaria

Table XII—Specimens Examined for Malaria

1920-21	Positive	Negative	Questionable	Total
	—	55	—	55

In the report for the year 1919-20 there was one positive specimen of malaria to record. During the past year with practically the same number of smears to examine the malarial parasite has not been found at all. The results in this Laboratory would indicate that either the examiners are losing their skill in being able to recognize the malarial parasite or else this disease is rapidly disappearing from Connecticut. We believe that the latter explanation is the correct one.

Rabies

Table XIII—Specimens Examined for Rabies

1920-21	Positive	Negative	Questionable	Total
	6	23	—	29

The number of specimens, chiefly of dogs' heads, received for examination for rabies during the past year is nearly at the same low level as for the preceding year. Only six specimens that gave positive results have been received during this period.

Routine Work in Chemical Department
Water and Sewage Analysis

In this Department the examination of water and sewage, and also the chemical and bacteriological examinations of milk are made. Mr. P. E. Bransfield has continued in charge of the work as chief chemist, with Miss E. Louise Smeallie as assistant, during the entire year. The crowded conditions in which this work has to be done have been previously emphasized and do not need to be repeated. The number of specimens of water and sewage examined during the year is given by months in table XIV and also the type of the specimen in the case of water is there shown. The number of towns from which these specimens have been received is also given.

A few towns of the State have samples of the water examined from the public supplies at regular intervals. This is true of only a comparatively small number, however. If the chemical examination of water is to be carried on by the State Laboratory a much larger demand for this work should be forthcoming.

Digitized by Google

Table XIV—Water Analysis

1920-1921

	Public Supplies			Wells			Springs			Private Reservoirs			Streams			Brooks			Lakes			Ponds			Sewage		Ice			Cisterns			Totals			Number or Towns Sending Samples		
	G	B	?	G	B	?	G	B	?	G	B	?	G	B	?	G	B	?	G	B	?	G	B	?	E	I	G	B	?	G	B	?	G	B	?	G	B	?
July	34	4	2	21	13	3	18	5	2	4	1	4	1	..	..	..	1	..	1	..	1	..	..	..	2	..	..	..	..	..	1	..	81	25	12	50	21	7
Aug.	28	10	4	4	10	....	15	12	1	4	9	1	..	..	..	..	..	..	..	2	..	..	..	..	2	..	..	..	..	..	..	..	53	43	6	30	25	5
Sept.	47	5	3	9	9	4	5	3	1	3	1	....	..	..	..	..	1	..	1	..	..	..	1	..	4	..	..	..	..	..	..	..	69	20	8	34	18	6
Oct.	40	1	3	7	7	3	9	5	2	....	....	....	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	57	15	8	38	13	7
Nov.	24	3	11	12	4	3	11	....	2	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	49	7	16	39	8	12
Dec.	26	5	6	9	9	4	....	....	....	1	....	....	..	..	..	..	..	..	..	..	..	1	..	..	2	..	..	..	..	..	1	..	39	15	10	20	10	8
Jan.	29	1	7	2	2	2	2	....	....	....	....	....	..	1	1	..	..	..	..	1	..	2	1	..	..	..	..	..	..	..	..	..	35	5	10	20	5	9
Feb.	32	1	2	6	....	4	5	1	....	....	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	43	2	6	34	2	5
Mar.	34	....	4	8	....	1	1	....	....	2	....	....	.	..	..	2	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	48	....	6	28	2	5
Apr.	35	2	2	14	5	5	....	1	....	2	....	....	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	52	8	7	28	8	2
May	19	6	2	9	2	....	3	2	1	1	....	....	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	32	12	3	23	9	3
June	40	5	8	17	6	1	3	1	....	....	....	....	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	61	12	9	38	11	6
Total	388	43	54	118	67	30	72	30	8	17	11	5	1	1	1	3	5	1	4	3	1	4	2	1	12	..	1	.	..	..	3	..	619	164	101	382	132	75

G—good B—bad ?—questionable E—efficient I—inefficient

Digitized by Google

Milk

Table XV—Milk

1920-1921

Month	No. of Samples	No. of Towns	No. Below Fat	Low Refractometer Reading
July	299	14	41	6
August	407	18	45	2
September	177	12	10	0
October	199	13	21	2
November	126	11	7	0
December	146	8	10	0
January	196	15	31	1
February	110	11	14	1
March	150	14	10	0
April	158	14	22	0
May	235	12	12	0
June	304	14	16	2
Total	2,507	156	239	14

It is of interest to note that there has been a moderate increase in the number of specimens of milk received for examination during the last year as compared with the year immediately preceding this. Attention has been called in previous reports to the marked decrease in the number of specimens of milk received during recent years and the hope was expressed that much more attention might be given by health officers to this work. Not only has there been some increase in the number of specimens received during the past year but also several more towns have availed themselves of the opportunities presented by the Laboratory than during the preceding year.

In order to have the bacteriological examination of milk of value it is not only essential that these specimens should be collected under suitable conditions but that they should be thoroughly iced at once and delivered promptly to the Laboratory. If this work is worth doing at all it is worth doing in such a manner that the results may be as dependable as possible. This necessarily means that much more care must be shown in getting the specimens promptly to the Laboratory. In many cases this will require their being brought by a special messenger, as the sending them by express too often means delay. The work which has been done by this Laboratory in conjunction with other laboratories of the State, and which is given elsewhere in this report, emphasizes anew what was well known before, but too often forgotten, that very exact methods must be employed in the bacteriological examination of milk if the

Digitized by Google

results are to be dependable. It is hoped that it may be possible at some time in the future to make arrangements by which milk examinations may be done for the Department of Health in several laboratories in different sections of the State. This would lessen the difficulty in having prompt delivery of specimens made under satisfactory conditions for examination. It is possible that a beginning may be made, in connection with the appropriation granted by the last General Assembly, for this work in branch or associated laboratories.

Search for Typhoid Carriers

During the past year the Laboratory has again been called upon for assistance in connection with a small outbreak of typhoid fever in one of the State institutions. During the latter part of 1920 four cases of typhoid fever appeared there. In connection with the Widal tests made for diagnosis it was decided to make the Widal test on a considerable number of other inmates, using the serum method of performing the test and making cultures from the urine and stools of all cases giving a positive Widal test in a dilution of 1:40. Similar cultures were also made from two of the clinical cases of typhoid fever, the other two having proved fatal. One of the clinical cases showed the typhoid bacillus in the urine at the first two times that this was sent but it was absent in the five later examinations. In ten examinations of feces from this same patient the typhoid bacillus was found present in the third specimen but not in any of the others. The other clinical case has shown no typhoid bacilli, either in the urine in six different examinations over a period of over four months or in the stools over a period of four and a half months. It is, therefore, to be assumed that neither of these cases has become a carrier. A positive Widal test was obtained in the case of seven of the inmates and repeated cultures both from urine and feces have been made from each of these and from five of these the typhoid bacillus has been isolated. In one case the typhoid bacillus was found both in the urine and feces, in three other cases it was found in the feces only, and in one case in the urine only. In the case where it was present in both feces and urine eight different specimens of urine have been examined during a period of over four months. The fourth one of these examinations was the only one which gave positive results. During the same period seven specimens of feces have been examined. The first and third of these were positive, the rest negative.

Digitized by Google

In one of the inmates from whom the typhoid bacillus has been isolated in the stools, five cultures have been made from urine during the period above mentioned and nine from feces. The fourth examination of feces gave positive results. All the other cultures have been negative for the typhoid bacillus. In the second case in which the typhoid bacillus was found in the stool only, eight cultures have been made from the urine and seven from the feces. The second and third examinations of the feces gave positive results. All the others were negative. In the third case where positive results were obtained from the feces seven cultures were made from the urine at different periods and ten from feces. The fifth specimen of feces received from this patient gave positive results and all of the other examinations were negative. In one case where the typhoid bacillus was isolated in the urine and not in the feces the first specimen of urine gave positive results and the other four were negative. All nine of the specimens of feces were negative. The above results emphasize the well recognized fact that the discharge of the typhoid bacillus in carriers is often intermittent and that repeated cultures over a long period of time maybe negative in the case of such carriers.

From the results obtained in dealing with the situation it appears probable that the carriers who were responsible for the outbreak have been detected.

In this same institution Wassermann tests are being taken on all of the inmates. The results from this study will be of considerable interest when completed.

Special Bacteriological Examinations of Milk

On January 4, 1921, eight specimens of milk were taken at the plant of one of the large milk dealers in Hartford and were sent to four different laboratories of the State for bacteriological examination. These were supposed to be identical samples and were put into bottles provided by the Hartford Department of Health. It was learned later, however, that these samples were drawn from different spouts in the bottle filling apparatus. Two of these specimens were taken to the Hartford Board of Health Laboratory, two to the Newlands Laboratory in Hartford, two to the Laboratory of Storrs Agricultural School, and two to the State Laboratory at New Haven. The samples were received at the latter two laboratories at about 10 A. M. the day on which they were taken. The counts which were made on these eight samples of milk are as follows:

Digitized by Google

Table XVI—Samples of Milk from Hartford, Jan. 4, 1921

State	72,000
	79,000
Hartford	676,700
	315,500
Storrs	3,400,000
	3,400,000
Newlands	500,000
	600,000

These figures require but little comment, except that in general the two samples examined by each laboratory gave results very much alike. The very marked discrepancy in the result would indicate the improbability of these having been identical specimens when sent out. As was very natural, however, these results were utilized by those who are opposed to bacteriological regulations in the classification of milk on the grounds that they demonstrated the impracticability of utilizing bacteriological methods for such classification.

In view of the evident interpretations which would be put upon the results of this series of tests it seemed wise to the Director of the Laboratory that further series of tests should be carried out, and the State Dairy and Food Commissioner agreed to assist in this and arranged to have a second set of samples sent to six different laboratories in the State. These were sent out on March 16, 1921, having been taken, it is understood, under the direction of the health officer of Hartford or some representative of his. These were sent to the Laboratory of the Department of Health in Hartford, to the Laboratory of the City Department of Health in New Britain, to Storrs Agricultural Experiment Station, to the City Laboratory in Middletown, to the City Laboratory in New Haven, and to the Laboratory of the State Department of Health. The results of the bacteriological examination of this second series is shown in the following table:

Table XVII—Samples of Milk from Hartford, Mar. 16, 1921

Hartford	71,700
Middletown	173,900
New Britain	340,000
New Haven	630,000
Storrs	339.500
State	355,000

At the Storrs Agricultural College the specimen was divided into two parts and given to two different workers and the results shown in the table were those obtained by

Digitized by Google

these two workers at the laboratory. At the Laboratory of the State Department of Health plates were made by two different workers and the figures given on the chart indicates the average obtained by these two. The results obtained by the two were practically the same. It is evident that there is no such discrepancy in this series as occurred in the first series. Aside from the low count obtained by the Hartford Board of Health Laboratory, the counts varied from 174,000 to 630,000. Three of the laboratories obtained results very similar; namely, New Britain, Storrs, and the State Department of Health Laboratory.

It then seemed wise to go further in this work along two particular lines before calling together the different bacteriologists who had taken part in the test. The first of these was to send out samples which should be as nearly identical as possible up to the time of making the bacteriological examination and secondly to have the cultures made on absolutely similar agar in more than one laboratory. Accordingly, a third series of tests was arranged as follows. The State Laboratory secured milk from two different sources of supply; one of these was a dairy known to have milk of superior quality and the other was, presumably, a poorer milk, obtained at a store. The entire amount obtained from the former supply was put together in a sterile container which was then vigorously shaken twenty-five times or more, six sterile half-pint bottles were then filled with this, they were properly capped, protected further by sterile parafin caps and at once packed in ice. The other supply was similarly treated, each of the bottles being given a distinctive mark. Letters had previously been sent to each of the laboratories stating that these specimens would be sent at a certain date and requesting each laboratory to leave them packed in ice as they were received until exactly four o'clock, at which time they were to be plated according to the technique employed in that laboratory; also that a flask of agar would be sent to each laboratory from the State Laboratory and each laboratory was requested to make duplicate platings on the State Laboratory agar.

After packing the specimens of milk in ice they were taken by a representative of the Dairy and Food Commissioner to each of the other five laboratories which had taken part in the last test. At the same time a flask of agar was sent to these laboratories. The specimen kept at the State Laboratory was treated in exactly the same manner as had been directed for the other laboratories. This appeared to insure as identical conditions as possible as regards the samples to be examined by each laboratory. It should be

Digitized by Google

further stated that previous to this test each of these five laboratories had been requested to send a flask of its agar to the State Laboratory so that at the State Laboratory it would be possible to make platings on each kind of agar that was to be employed in the test. These specimens of milk were sent on April 19 and were plated by each laboratory on that date. The results reported by the different laboratories are given in Table XVIII.

Table XVIII—Samples of Milk from State Laboratory, April 19, 1921

	Sample No. I.			Sample No. II.		
	A	B	C	A	B	C
Hartford	268,600	378,000	35,750	54,600	22,500	450
New Haven	141,733	194,500	195,500	4,300	8,800	2,250
New Britain	350,000	410,100	338,000	7,500	8,100	11,100
Middletown	194,000	205,600	336,500	43,200	39,400	7,500
Storrs	535,000	520,000	386,500	10,000	10,600	12,950
State Laboratory	354,000	354,000	354,000	9,350	9,350	9,350

A. Each laboratory's count on own agar.
B. Each laboratory's count on State agar.
C. State Laboratory counts on agar from each laboratory.

As indicated, this shows the results obtained by each laboratory on its own agar, the result obtained by the State Laboratory on the agar from each of the other laboratories as well as on its own. In case of the laboratory reporting several different sets of results, as did the Hartford Laboratory, that one was taken which appeared to agree most closely with the technique employed in the other laboratories.

This table shows several things of interest. In the first column, A, the differences are between 141,000 and 535,000. In B, where the same agar was used by each laboratory, the discrepancy is not as great namely, from 194,000 to 520,000. In C, the interesting feature is the very low count obtained by the State Laboratory on the agar received from the Hartford Laboratory, which was only about a tenth of that obtained on the agar from most of the other laboratories. This result is noticeable in both samples of milk and is to be compared with the results shown in Table II, where the Hartford Laboratory also had a very much lower count than any of the other laboratories. The reason for this will be discussed later.

The results shown in Table III emphasize two things which are already well recognized by those familiar with the bacteriological examination of milk. They are in agreement with the conclusions reached by Professor Conn and others several years ago as a result of an extensive series of milk tests made in various laboratories in New

Digitized by Google

York City. The first is that there are bound to be wide variations in the results obtained in the examination of the same specimen of milk whether these specimens are examined at different laboratories or whether they are examined at the same laboratory. The second point which is to be equally emphasized is the fact that these discrepancies are not sufficiently great but that a sample of milk of exceptionally good grade bacteriologically will be found to be so by almost every laboratory examining it, provided proper methods are employed in such examination; and a sample with a high bacteriological content will be found to be so by practically every laboratory examining it. In other words, milk can be graded bacteriologically but the limits within which the classifications are made must not be too closely drawn.

In addition to these general results there were many other things of interest shown by the results in detail obtained by the different laboratories and it seemed wise to call a meeting of the workers in the various laboratories that took part in this test. This meeting was, accordingly, held on the afternoon of May 9, 1921, at the Connecticut Experiment Station building adjacent to the Laboratory of the State Department of Health at New Haven. All of the six laboratories were represented and a general discussion of the results obtained, methods to be followed, interpretation of bacteriological findings, etc., took place. Among the things discussed and shown by charts the following may be mentioned. The results obtained at Storrs Agricultural Experiment Station as shown in Table XIX.

Table XIX—Storrs, Milk from the State Laboratory, April 19, 1921

Sample	Official Own agar	State Agar
1	535,000	520,000
2	10,000	10,000
Students	Sample No. 1	Sample No. 2
S. E. J.	376,300	14,100
A.	410,600	12,700
G.	448,300	16,400
R.	417,500	14,700
B.	443,400	12,500
C. A. S.	342,500	12,450

These results were obtained by several workers in addition to the one who made the official count. These workers were advanced students in dairy bacteriology, working under conditions where great exactness could be given to the

Digitized by Google

technique and much more time was available for the examination of a single specimen than could obtain in the routine examination of milk samples. It is, however, of decided interest to see how closely these results tallied with each other. Their dilution varied, some being 100, some 400, some 5,000.

In the State Laboratory the plates were made in this test in the routine manner; namely, a single dilution from each specimen and two plates were made from each, one with 1 cc of this dilution and the other with 0.1 cc of this dilution, thus giving a plate diluted 1:100 and a plate diluted 1:1,000. Also a dilution of 1:10,000 was made and a plate made from this, using 1 c. c. Also these plates were counted by two different workers. Plates were made in this manner on the agar received from each one of the five other laboratories as well as upon the agar of the State Laboratory. The results obtained are shown in Table XX.

Table XX—State Laboratory, Collected April 19, 1921

	I. 1-1,000		I. 1-10,000		II. 1-100	
	P. E. B.	E. L. S.	P. E. B.	E. L. S.	P. E. B.	E. L. S.
Hartford	32,200	39,300	20,000	20,000	500	400
Storrs	383,000	390,000	390,000	450,000	13,000	12,900
New Haven	224,000	167,000*	410,000	465,000	2,300	2,200
New Britain	366,000	310,000	285,000	315,000	11,000	11,200
Middletown	310,000	363,000	490,000	585,000	7,500	7,500
State	393,000	315,000	755,000	720,000	9,300	9,400

* Poor plates; colonies all on one section and apparently too crowded.

That there should be some discrepancy in the number of colonies counted by two different individuals is to be expected. Professor Conn in his tests found at times that this was 100% or more. In general the counts made by the two different individuals tallies closely, as shown in the table.

Two things are shown rather strikingly by the table; first the consistently low count obtained on the agar received from Hartford in the case of both specimens and secondly the high count obtained in the 1:10,000 dilution made on the State Laboratory agar as compared with the other counts. In general, also, this table shows the variations that may be expected in counts made on agar, the composition of which is practically the same provided we exclude the agar received from the Hartford Laboratory.

From the Laboratory of the Hartford Department of Health there was received a table of results as obtained there by using agar showing various grades of acidity and

Digitized by Google

alkalinity and comparing these results with those obtained upon the agar furnished by the State Laboratory. From the discussion which followed and from previous correspondence with the Director of the Hartford Laboratory it was learned that the reaction of the agar employed there in the routine examination of milk was alkaline, as was also the sample of agar sent from that Laboratory to the State Laboratory. The use of alkaline agar for this purpose is so distinctly different from the requirements as outlined in the "Standard Methods for the Bacteriological Examination of Milk" adopted by the Laboratory Section of the American Public Health Association in September, 1920, that it was generally felt by those taking part in the discussion that it was not suited for making bacteriological tests of milk. The opinion was expressed by the Director of the State Laboratory that low bacterial counts in a city milk supply could readily be explained by the use of a culture medium of this reaction.

Table XXI shows the results obtained in the Laboratory of the New Haven City Department of Health.

Table XXI—City Department of Health, New Haven, Milk From State Laboratory, April 19, 1921

Sample	Agar	(100)	(1000)	(10,000)	Average
I	State	*209,600	254,000	120,000	194,500
I	City	*171,200	134,000	120,000	141,733
II	State	7,400	9,000	10,000	8,800
II	City	4,600	4,000	Sterile	4,300

* Estimated

The results obtained by the New Britain Department of Health and the Middletown Department of Health are sufficiently indicated on the tables previously given. The exact dilutions made were not indicated, some of them were 1:100, some 1:1,000, and some 1:10,000, but the figures sent to the State Laboratory appeared to have been based upon the plates which seemed most suitable for the count and the other results except as above indicated were not kept.

In connection with this work the reaction of the samples of agar received from each of the laboratories taking part in the last set of tests was determined by Mr. Bransfield of the State Laboratory. This test was made by determining the hydrogen on concentration by the Brom Thymol Blue method. The agar from Hartford showed a very distinct alkalinity, the others were all within the prescribed limits of the appropriate reaction for milk work.

Digitized by Google

A description was received from each laboratory giving the exact technique used routinely in that laboratory in the examination of milk, including the preparation of the agar. In general, aside from the reaction of the agar used at Hartford, these methods are quite similar. In the discussion at this conference it was agreed that each laboratory should adhere strictly to the "Standard Methods for the Bacteriological Examination of Milk" 1921 edition, adopted by the Laboratory Section of the American Public Health Association, and that after a sufficient time had elapsed so that each laboratory had become familiar with the technique it would be wise to have another set of milk samples sent to the different laboratories to again find the results: also that it would be wise to have a permanent organization of laboratory workers in the State and to interest other laboratories in these results. Such an organization was provided for by motions which were made and carried, that the Director of the State Laboratory should be president, and Mr. P. E. Bransfield of the State Laboratory should be secretary and treasurer of the organization.

It was arranged that the Director of the State Laboratory should communicate with other laboratories of the State not represented at this conference, informing them of the conclusions arrived at in this discussion: namely, that the "Standard Methods for the Bacteriological Examination of Milk" 1921 edition should be used by each laboratory in the examination of milk and that all laboratories in the State making such examinations should be requested to adopt these methods for their routine work.

C. J. BARTLETT, M. D.
Director, Bureau of Laboratories.

Digitized by Google

BUREAU OF LABORATORIES

July 1, 1921.-June 30, 1922

Digitized by Google

Digitized by Google

REPORT OF THE BUREAU OF LABORATORIES

To John T. Black, Commissioner of Health

The following report of the Bureau of Laboratories covers the period from July 1, 1921 to June 30, 1922, inclusive.

Laboratory Conditions

The laboratory conditions are similar to those described in the last three reports and need no repetition at this time. It will be impossible to take up new lines of public health laboratory work until the facilities are further developed.

Laboratory Staff

The staff of the Laboratory consists of eleven full-time workers and two part-time workers, in addition to the Director. They are as follows: Mr. P. E. Bransfield, B. A., Assistant Director in general charge of the Diagnostic and Chemical Departments; Miss M. Louise Butler, B. A., serologist; Miss E. Louise Smeallie, B. S., chemist; Miss Pauline E. Tucker, stenographer; Mrs. Margaret M. Rice, bacteriologist; Miss Katherine E. Haywood, A. B., assistant serologist; Mrs. Adeline K. Loeb, B. A., (part time) assistant bacteriologist; Miss Florence E. Norton, assistant in chemical department; Miss Edith E. Wahlers, clerical assistant; Miss N. T. Connell, Miss Theresa Casey, Mr. David E. Anderson, and Mr. Irving Goldbaum (part time) laboratory employees. During the past year Mr. Bransfield has been advanced to the position of Assistant Director of the Laboratory. There have, fortunately, been but few changes in the personnel of the laboratory staff during the past year. It is to be regretted that Miss E. Louise Smeallie, who has been with the Department for nearly five years, plans to leave early in the fall to resume her studies for an advanced university degree.

Amount of Laboratory Work

The report for the past year, unlike that of the preceding year, shows no increase in the number of specimens examined. It shows a slight decrease. The year 1920-21 showed an increase over the previous year of approximately 28%. This year there have been examined 41,540 speci-

Digitized by Google

mens as compared with 44,100 specimens in the previous year, a decrease of a little less than 6%, as shown by Table No. I. This decrease has been entirely in the Diagnostic Department. The Chemical Department shows a slight increase.

Digitized by Google

Table I—Number of Specimens Examined Annually for the Past Ten Years

	1912-1913	1913-1914	1914-1915	1915-1916	1916-1917	1917-1918	1918-1919*	1919-1920	1920-1921	1921-1922
Tuberculosis	1,503	1,515	1,386	1,550	1,522	1,512	1,108	2,056	1,526	1,556
Diphtheria	6,582	3,716	6,045	6,834	3,742	10,004	5,862	16,318	20,944	20,460
Typhoid	975	716	879	889	663	1,650	298	601	1,127	606
Rabies	14	24	73	28	141	115	51	24	29	48
Malaria	97	93	100	123	74	42	19	54	55	53
Glanders	455	285	160	265	82	196	38	85	4	3
Syphilis	.....	562	2,479	3,288	5,389	4,481	4,775	10,349	13,511	13,894
Gonorrhoea	.....	.....	12	45	91	412	397	765	796	609
Pneumonia	.....	.....	.....	.....	1	.....	14	41	40	26
Feces for Typhoid	.....	.....	.....	.....	6	32	205	42	225	159
Diphtheria virulence	.....	.....	.....	.....	.....	12	96	114	80	126
Paratyphoid A	.....	.....	.....	.....	.....	160	298	601	1,127	187
Paratyphoid B	.....	.....	.....	.....	.....	160	298	601	1,127	604
Urine for typhoid	.....	.....	.....	.....	.....	.....	.....	.....	103	59
Feces for paratyphoid A	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Feces for paratyphoid B	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Water and Sewage	572	606	599	553	532	1,107	572	973	884	1,248
River Water	.....	768	96	73	.....	.....	.....	.....	.....	.....
Milk	4,193	3,764	3,156	3,294	2,694	1,778	1,339	1,795	2,507	2,375
Special	80	105	81	88	46	42	13	38	15	34
Totals	14,471	12,154	15,066	17,030	14,983	21,703	15,383	34,457	44,100	41,549

*Nine month period.

Digitized by Google

This decrease was not anticipated; in fact it is quite the opposite of what was anticipated at the time of the last Annual Report. A study of Tables No. I and No. II is of interest in this connection. This shows that the decrease for the past year in the Diagnostic Department as compared with the preceding year is 2,783 specimens. Only a comparatively small number of these occur in the groups in which the largest number of specimens has been received; namely, cultures for diphtheria and specimens of blood for the Wassermann test. The former had less than 500 fewer specimens in 1921-22 than in 1920-21, a decrease of about 2 1-3%. The number of Wassermann specimens showed less than 1% decrease over the previous year. There were 187 fewer smears received to be examined for gonococci than in the previous year. While this number is not large, it represents a decrease of 23½%. The chief decrease is found in the number of specimens examined in connection with typhoid fever or suspected typhoid carriers. This is accounted for by the fact that during the year 1920-21 the Laboratory was making special examination for typhoid carriers in one of the State institutions and thus had an unusual number of these specimens during that period for examination and, furthermore, by the fact that during the past year the agglutination test for paratyphoid A has been discontinued, whereas previously this had been routine. During the entire time that agglutination tests had been made for paratyphoid A no case of this infection had been found by this test. Accordingly, it did not seem justifiable to take the time necessary to continue this as a routine measure. Hereafter, the test will only be made when particularly requested.

Digitized by Google

Table II—Summary of Work Done in the Diagnostic Department of the Laboratory by Months

1921-1922	Typhoid	Paratyphoid A	Paratyphoid B	Diphtheria	Diphtheria Carriers	Diphtheria Virulence	Tuberculosis	Syphilis	Gonorrhoea	Glanders	Pneumonia	Malaria	Rabies	Feces for Typhoid	Feces for Paratyphoid A	Feces for Paratyphoid B	Urine for Typhoid	Special	Total
July	75	75	67	494	22	3	106	1,041	50	..	3	3	3	22	..	..	1	6	1,971
Aug.	85	85	92	586	2	1	138	1,029	65	1	..	12	4	24	..	..	8	1	2,133
Sept.	68	27	68	787	362	4	109	974	50	..	1	7	2	26	..	..	..	1	2,486
Oct.	64	....	64	1,242	460	1	114	1,042	59	1	1	6	..	16	..	..	12	3	3,085
Nov.	50	....	50	1,434	1,452	2	121	1,148	40	..	7	4	4	12	..	..	6	5	4,335
Dec.	39	....	38	1,610	1,392	12	123	1,102	39	..	3	2	5	14	..	..	9	2	4,390
Jan.	18	....	18	1,566	1,065	18	120	1,050	38	1	2	4	5	6	..	1	6	2	3,920
Feb.	17	....	17	1,398	426	15	132	1,061	49	..	3	2	9	..	..	..	..	2	3,131
Mar.	25	....	25	1,792	470	18	169	1,409	61	..	3	..	8	20	..	..	1	1	4,002
Apr.	28	....	28	1,054	52	28	146	1,081	52	..	2	6	5	6	1	..	7	3	2,499
May	51	....	51	764	1,196	16	155	1,188	50	..	1	5	1	5	..	..	4	7	3,494
June	86	....	86	600	234	8	123	1,269	56	..	..	2	2	8	..	..	5	1	2,480
Total	606	187	604	13,327	7,133	126	1,556	13,394	609	3	26	53	48	159	1	1	59	34	37,926

Digitized by Google

Furthermore, in connection with the year's work in the Diagnostic Department, a study of Table No. II, which shows the work done in that Department by months, is of considerable interest. This should be compared with the similar table given in the last Annual Report. In the report for 1920-21 there were four months, namely, November, December, January, and February, in each of which the total number of specimens in the Diagnostic Department was over 5,000. During the past year the largest number of specimens received in any one month has been 4,390. This, as compared with the corresponding month of the previous year, which was also the month having the largest number of specimens for the year, shows that 1,200 fewer specimens were received in the month of December 1921 than in the month of December 1920. On the other hand, the smallest number of specimens received during any month in 1920-21, namely, July 1920, was 1,649, whereas the smallest number received in any month during the past year, namely July 1921, was 1,971. A comparison of Table No. II and the corresponding table in the last Annual Report indicates that the amount of work done monthly has been much more nearly uniform during the past year than it was during the preceding year. From the Laboratory standpoint such relative uniformity is a distinct advantage. It lessens the number of hectic days in which so excessive a number of specimens is received as to compel repeated over-time work in order to make the diagnoses as promptly as possible.

In connection with the amount of work performed in the Laboratory, it seemed probable a year ago that it would be necessary to omit some of the less important work in order to meet the increased demand in the more important lines. Action looking toward this was taken by the Public Health Council but, fortunately, this has not been necessary in view of the decreased amount of work during the past year.

New Lines of Work

During the past year plans have been made to take up only one new line of work. This consists in testing clinical thermometers, agreeable to a law passed by the last session of the General Assembly. This matter is discussed in detail at the end of this report.

Digitized by Google

Rates of Postage on Laboratory Specimens

From a few different cities in the State reports have been received that the local post offiice officials have ruled that containers could not be sent to the Laboratory at Parcel Post rates because of the writing on the cards sent with the containers. This subject has been taken up carefully with the postal authorities and a ruling has been received, through the assistance of the post office officials in New Haven, that the writing on the cards in answer to the questions is to be considered as descriptive of the specimens and as not militating against these being sent at Parcel Post rates, but with two exceptions; namely, that giving telephone number or adding "Remarks" other than those which are "descriptive" subject the package to first-class rates. In all cases these containers are to be mailed in first-class pouches. Any physician sending specimens to the Laboratory who is confronted with a ruling contrary to this at the local post office is requested to call attention to this finding.

Typhoid and Paratyphoid

Table III—Agglutination test for Typhoid and Paratyphoid

1921-22	+	—	?	Total
Typhoid	63	505	38	606
Paratyphoid A	...	187	...	187
Paratyphoid B	3	599	2	604
Total	66	1291	40	1397

As indicated heretofore, the testing of specimens routinely by the agglutination test for paratyphoid A has been discontinued except when a special request is made for this test. This accounts only in part for the decreased number of specimens received for examination during the last twelve months as compared with the preceding year. 521 fewer samples of blood were received during the past year for the Widal test for typhoid fever than during the preceding year. As already indicated, this was chiefly due to the smaller number of specimens received from one of the State institutions during the last year as compared with the previous year. Likewise, as shown by Table IV when compared with the similar table in the last Annual Report, there has been a considerable decrease in the number of specimens of feces and urine received to be examined for the typhoid bacillus. This is to be explained in the same way as the decrease in the number of specimens of blood for the Widal test.

Digitized by Google

Table IV—Specimens of Feces and Urine Examined for Typhoid and Paratyphoid

1921-22	+	—	?	Total
Feces for typhoid	2	157	...	159
Urine for typhoid	7	52	...	59
Feces for paratyphoid A	1	...	...	1
Feces for paratyphoid B	1	...	...	1
Total	11	209	...	220

In connection with the examination of stools and urine for typhoid carriers it is to be emphasized that in case of suspected carriers a single culture is not sufficient to justify the conclusion that the individual is not a carrier. Several cultures on specimens taken at least twenty-four hours apart should be made before determining that the person is not discharging typhoid bacilli. Again this year the Director would urge that in every case of typhoid fever at least two cultures for the typhoid bacillus should be made from urine and feces during the convalescence of the patient before such a patient is discharged. If these show the presence of the bacillus in either urine or feces the patient should be treated as a typhoid carrier and further examinations of urine and feces should be made at intervals until it is definitely determined whether the bacillus has evidently disappeared from the discharges or whether the person has become a permanent carrier. Such a study of individuals who have recovered from typhoid fever will markedly lessen the chances for the spread of the disease.

Diphtheria

Table V—Specimens Examined for Diphtheria

	Diagnosis				Release				
1921-22	+	—	?	Total	+	—	?	Total	Total
Individual ..	1,980	5,114	—	7,094	1,687	4,546	—	6,233	13,327
Carriers	760	5,027	—	5,787	290	1,056	—	1,346	7,133
Total	2,740	10,141	—	12,881	1,977	5,602	—	7,579	20,460

Table V shows the number of specimens examined for diphtheria during the past twelve months. As heretofore, these are divided into those received for diagnosis, those examined for release, and those examined in the search for carriers. While the total number of specimens examined this year as compared with the previous year is only slightly less these have come in much more uniform numbers each month and, accordingly, have been more readily cared for in the Laboratory.

Digitized by Google

In the last Annual Report attention was called to a bill passed by the last session of the Legislature providing for branch laboratories for the examination of diphtheria cultures in those parts of the State in which these laboratories might be located. At that time it was understood that the bill referred to carried an appropriation for this purpose. Unfortunately, however, there was no such appropriation provided for in the bill and it has, accordingly, been impossible to take up this work which is so essential in the fight against diphtheria in this State. Several requests have come from different parts of the State for such assistance but the only possible reply has been that no financial provision has been made for it. It is to be hoped that the next Legislature will provide funds necessary to inaugurate this work.

In the last Annual Report attention was called to the multiple cultures examined in the case of each individual in the diagnosis and release of diphtheria. During this past year the results which have been secured by such duplication of examinations have been tabulated. These results are given in the discussion of special work at the end of this report. They indicate that the additional time required for such work is more than justified by the greatly increased number of positive cases found by this means.

Attention may be again called to the fact that these duplicate cultures both from nose and throat are not counted as separate specimens in the table given above. If this was done the total number would be increased approximately 12,000 specimens.

Diphtheria Virulence

Table VI—Specimens Examined for Diphtheria Virulence

	+	—	?	Total
1921-22	46	80	—	126

There has been a considerable per cent. increase in the number of specimens examined during the past year for diphtheria virulence as compared with those of any previous year. Only lack of room prevents this work being taken up on a considerably larger scale.

In order that physicians may appreciate the importance of this it may be well to briefly state the object in making this virulence test. Bacilli which are culturally and microscopically similar to the diphtheria bacillus are found in the throats of healthy individuals. Such persons are, accordingly, put down as diphtheria carriers. It is, however, well

Digitized by Google

recognized that these organisms may not be virulent, or disease producing, diphtheria bacilli. However, only an animal inoculation can determine this. It becomes necessary to obtain the bacillus in pure culture and to test it on two guinea pigs, one of which has been immunized to the diphtheria bacillus by means of diphtheria antitoxin. In this way it is possible to determine whether an individual is a carrier of virulent diphtheria bacilli or nonvirulent organisms. A considerable per cent. of so-called diphtheria carriers are not a menace because the organisms in the throat and nose are nonvirulent. Many children being kept from school as diphtheria carriers are in no way dangerous to others. In every case where an individual continues to be such a carrier this virulence test should be done and the Laboratory should have sufficient facilities for meeting the entire demand for doing this. Otherwise, numerous children are kept from school or other occupation when it is entirely unnecessary.

Tuberculosis

Table VII—Specimens Examined for Tuberculosis

1921-22	+	—	?	Total
	263	1,293	...	1,556

The number of specimens of sputum examined for tubercle bacilli has shown a slight increase the past year as compared with the previous year. In fact, with the exception of the year 1919-20, the number of specimens examined in the past year is the largest of any year for ten years. It is always timely to emphasize the necessity of sending repeated specimens of sputum in any suspected case of pulmonary tuberculosis, provided the first examination is negative. Some experts in the study of tuberculosis insist upon having at least five or six specimens, taken at different periods, examined before negative results are accepted. In this connection during the past year *seven* specimens were received from one patient, all of them giving negative results except the last one, which was positive. As heretofore, the concentration method of examining sputum is relied upon as giving a larger number of positive cases than does the direct smear from the sputum without such treatment.

Digitized by Google

Syphilis

Table VIII—Specimens Examined for Syphilis

1921-22	+	—	?	Total
	2,046	10,549	799	13,394

As already indicated above, there has been no increase, but a slight decrease in the number of specimens received for the Wassermann test during the past year as compared with the preceding year. The average, however, has been about 267 specimens per week, or 37 specimens per day for each of the 365 days of the year. The failure to receive a larger number of specimens both for the examination of syphilis ad gonorrhoea is probably to be accounted for by the lessened agitation regarding these diseases during the past year as compared with the years immediately preceding it. It seems desirable to again emphasize the value of the Wassermann test in obscure cases even when syphilis as a causative factor is not thought of. In obscure medical and surgical conditions a positive Wassermann not infrequently throws light upon the case which cannot be obtained in any other way. A physician who specializes in gastro-intestinal diseases recently remarked to the Director of the Laboratory that he was impressed with the number of cases of stomach trouble in which he obtained a positive Wassermann test. No medical case of obscure etiology has been studied completely without a Wassermann test.

No material change has been made in the method of performing the Wassermann test over that of the previous year. The icebox method of fixation is continued. Although it requires a somewhat longer time to make the test, it is felt that the results are sufficiently more accurate to justify this longer period.

Gonorrhoea

Table IX—Specimens Examined for Gonorrhoea

1921-22	+	—	?	Total
	102	507	...	609

The decrease in the number of specimens received for examination for gonococci during the past year is quite striking. While the total number is not particularly large the percentage is decidedly so. As indicated above, this decrease is, presumably, to be accounted for by the lessened public agitation regarding venereal diseases which

Digitized by Google

has occurred recently as compared with the year or two previous.

Glanders

Table X—Specimens Examined for Glanders

	+	—	?	Total
1921-22	1	...	2	3

This table is continued this year in order to again emphasize the very marked decrease in the number of specimens now received as compared with those received a few years since. If we may judge the prevalence of the disease by such statistics it has been nearly eradicated in this State.

Pneumonia

Table XI—Specimens Examined for Pneumonia

	Type I	Type II	Type III	Type I, II & III	Type IV	—	Total
1921-22	3	...	4	1	11	7	26

An even smaller number of specimens has been received for typing for pneumococci than was the case in 1920-21. The only apparent explanation is that physicians are not generally employing the antipneumococcus serum method of treating pneumonia due to Type I pneumococci.

Malaria

Table XII—Specimens Examined for Malaria

	+	—	?	Total
1921-22	1	52	...	53

Again the examination of specimens of blood for malaria has given negative results during the past year with one exception.

Rabies

Table XIII—Specimens Examined for Rabies

	+	—	?	Total
1921-22	26	22	...	48

It is to be regretted that this disease among animals has been considerably more prevalent during the past year, if the results of the examinations of brains sent to this Laboratory are to be relied upon, than was the case during the previous year. It is noticeable that of the forty-eight

Digitized by Google

brains received for examination more than half of these (twenty-six) have given positive results. This is in contrast to six positive cases found in the specimens received during the preceding year.

ROUTINE WORK IN CHEMICAL DEPARTMENT

Water and Sewage Analysis

No material change has been made in the work of the Chemical Department during the past year. There has been a moderate increase in the number of specimens of water and sewage received during the past year as compared with the previous year. It is felt, however, that this Laboratory, even with its limited facilities, can be of much more assistance in the examination of specimens of water from the different communities of the State than it is at the present time. This can only be accomplished by materially increasing the number of bacteriological examinations of water without increasing, or even with some decrease in the number of samples examined chemically. The space necessary for such bacteriological examinations is small, the results to be derived from these examinations are of much value, and it is felt the emphasis in the future should be placed more upon frequent bacteriological examinations. In this connection, however, it is essential that these specimens should reach the Laboratory without having stood at a high temperature for any considerable length of time. When this occurs there is a considerable increase in the number of bacteria found per cubic centimeter. This is not only undesirable where accurate results are hoped for but is of great importance where the water supply is to be used for interstate commerce purposes. For this purpose definite regulations regarding the number of bacteria present, the presence of the Colon Bacillus, etc., are given. Specimens which may have originally met this requirement in every respect later, due to multiplication of bacteria, show so high a bacterial content that the supply is considered unsuitable for interstate commerce purposes. In order to overcome this it is essential that either specimens should reach the Laboratory very shortly after they are taken or they should be shipped in containers in which the ice packed around the specimens will remain without melting for the period necessary for them to reach the Laboratory. The expense of containers of this type is considerable, probably more than can be met by the funds of the Laboratory. It is suggested that individual water com-

Digitized by Google

panies should provide themselves with the necessary number of such containers, approved by this Laboratory, and, should have them marked with their own names, in which case they will be considered private property and used only for the purposes of the company to which they belong.

Bacteriological examinations of public water supplies should be made weekly. Where there is more than one source of supply a separate specimen should be taken from each of the separate sources. In the case of chlorination plants such a bacteriological examination is of value in indicating the effectiveness of the plant.

Table XIV shows the number of samples of water and sewage examined during the past year, with the classification of the water into that which was apparently good, that which was undoubtedly poor, and that which was questionable.

Digitized by Google

Table XIV—Water Analyses

1921-1922

	Public Supplies			Wells			Springs			Private Reservoirs			Brooks & Streams			Lakes			Ponds			Sewage			Miscellaneous			Totals			
	G	B	?	G	B	?	G	B	?	G	B	?	G	B	?	G	B	?	G	B	?	E	I	Sp	G	B	?	G	B	?	Sp
July	27	4	14	9	12	2	1	1	....	..	..	..	..	1	..	..	..	..	..	2	..	2	..	..	..	..	..	39	20	16	..
Aug.	32	9	10	8	26	10	3	5	3	..	..	..	..	11	..	..	..	1	2	1	..	..	..	..	..	..	1	45	52	25	..
Sept.	24	9	17	19	13	4	13	9	10	..	..	..	..	1	..	..	..	1	..	..	..	5	..	..	..	..	..	61	32	32	..
Oct.	17	3	17	13	4	6	11	9	7	..	..	..	..	1	..	..	..	..	..	..	..	3	..	..	..	..	..	44	17	30	..
Nov.	30	4	4	13	5	1	8	2	8	1	1	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	52	13	14	..
Dec.	37	5	14	7	2	4	8	3	3	..	..	1	..	1	..	..	..	..	3	2	..	2	..	..	..	..	..	57	13	22	..
Jan.	37	1	6	2	1	....	6	1	....	9	..	..	2	1	..	..	..	..	3	..	..	..	..	..	1	..	1	60	5	6	..
Feb.	48	1	1	4	....	5	1	....	....	1	..	..	..	..	..	..	..	..	5	..	..	..	..	..	2	1	..	61	2	6	..
Mar.	76	10	2	11	1	2	6	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	94	12	5	3
Apr.	82	15	8	7	2	3	4	....	1	..	..	..	..	..	1	..	..	..	3	1	2	..	..	..	..	..	..	96	18	15	..
May	22	10	....	18	12	9	14	1	2	..	..	..	2	6	1	1	1	..	1	1	..	..	..	34	..	1	..	58	32	12	34
June	45	18	8	9	20	4	11	9	6	..	..	..	3	7	..	..	..	..	..	..	..	4	..	..	1	..	..	73	54	18	..
Total	477	89	101	120	98	50	86	41	41	12	1	1	7	29	3	1	2	2	17	7	2	16	..	37	4	2	2	740	270	201	37

G—good B—bad ?—questionable E—efficient I—inefficient Sp—special

Digitized by Google

Milk Examinations

Table XV.—Milk

1921-1922

Month	No. of Samples	No. of Towns	No. Below Fat	Low Refractometer Reading
July	221	9	11	4
August	345	17	16	2
September	248	14	26	2
October	150	14	12	2
November	114	11	2	0
December	116	7	1	0
January	164	13	6	0
February	228	13	17	1
March	138	9	8	1
April	214	10	3	0
May	214*	13	5	0
June	223	13	4	0
Total	2,375	143	111	12

* Two samples of icecream

The increase in the number of specimens of milk examined during the year 1920-21 as compared with the previous year has been changed to a decrease during the past twelve months. This is somewhat disappointing in view of the continued agitation for the bettering of the milk supply of the State. It is to be hoped that the number of specimens sent in during the next twelve months may show a material increase over the past year. Emphasis must again be placed upon the necessity of sending these samples in such a way that they will not only be iced when shipped but that this may remain until they reach the Laboratory.

SPECIAL WORK

Value of Multiple Cultures in Diagnosis of Diphtheria

This Laboratory, in common with other public health laboratories, has passed through various transition periods as regards the outfits used in securing cultures to be examined for the presence of the diphtheria bacillus. At first a single swab was sent in the container and when this was returned to the Laboratory a culture was made from it. Later Loffler's serum in vials was sent out and a culture from the throat was made, this being planted by the physi-

Digitized by Google

cian who took the culture. This was incubated after being received at the Laboratory and examination made from the growth on it.

In the latter part of 1917 the containers were changed so that two swabs and two vials of culture medium were sent out in each container, with the request that a culture be made both from nose and throat. The cultures were planted, as before, by the physician who took them, and they were incubated after being received at the Laboratory. In the early part of 1918 our technique was changed to the extent of having the swabs as well as the vials of serum returned after the physician had planted the cultures and upon their receipt at the Laboratory a second culture was made from each one, and all four cultures were incubated and examined. The outfit as sent out at the present time for diphtheria cultures thus consists of two narrow, elongated envelopes, one marked "nose" and one "throat", each containing a sterile swab and sealed so that the swab does not become contaminated, and two vials of Loffler's serum, one marked " throat" and one "nose". These are screw cap vials and the top of each is paraffined. The physician is instructed to rub the swab from the throat carefully over the surface of the serum in the vial marked "throat" and then to replace the swab in its envelope. The same is done with nose culture. The instructions request the physician to be sure to pass the swab back as far as may be in the nostril. These are not received at the Laboratory as a rule until the following day after the swab is taken. A culture is then made from each of the swabs into a tube of Loffler's serum and the four cultures from the same case are incubated, as a rule over night, when they are examined for the presence of the diphtheria bacillus. It is the purpose of this study to determine whether the present system of examining four cultures from each case is justifiable or not, whether enough extra positive cases are found in this way over what would be detected if a single plant was made from both nose and throat to justify the duplicating of the number of cultures.

At times the physician fails to return the swabs as requested; or occasionally the serum in the vials has become mouldy or dried; or for some other reason the case cannot be included in this study. However, the results recently compiled for a period of two years give 9,237 sets of cultures made as above described which can be used for this study. This does not mean that there were 9,237 individual cases, as a part of this number represents the repeat cultures on the same case, two negative cultures

Digitized by Google

being necessary for a discharge of any positive case. A few of these showed no growth but it was thought proper to include these with the others. Of this total number, 9,237, in 51 there was no growth on any of the tubes and in 5,790 others the cultures were all negative for the diphtheria bacillus. In 709 others some of the tubes were negative and some showed no growth. This gave 6,550 which were negative or had no growth. Deducting these from the total, that leaves 2,687 or 29% which gave positive results in one or more of the cultures. It is the study of these 2,687 sets of cultures which is of interest. In 117 of these all of the cultures both from the nose and throat were positive. In 433 others both throat cultures were positive and in 278 others both nose cultures were positive. It is of interest to notice that of the positive cultures 828 agreed both in the culture made by the physician and in that planted at the Laboratory: that is, there was an agreement in 30.8% in all of the positive cultures. If the negative cultures and those showing no growth in which there was an agreement in all four cultures were added to this it would show a total agreement in 6,669 of the 9,237 cases, or 72%. Aside from the 828 positive cultures in which there was agreement in the results of the cultures planted by the physician and those planted by the Laboratory, there were discrepancies to some extent in the remainder of the positive cultures. Summarizing the results of the total number of these positive cultures, 2,687, the throat cultures planted by the physician gave 1,330 positive cultures; that is, 49.5% of all positives. In other words, if reliance had been placed entirely upon the results which were obtained by this method 50% of the entire number of positive cultures would have been missed. The Laboratory cultures made from the throat gave a somewhat lower per cent. than did those planted by the physician, 1,139 positive cultures, or 42.4% of the total number of positive cultures; that is, over 57% would have been missed if reliance had been placed entirely upon results obtained in this manner. The cultures planted by the physician from the nose gave 1,026 positive diphtheria cultures; that is, 38.2% of the total number. The nose cultures planted at the Laboratory gave 965 positive results, or 35.9% of the total.

It may also be of interest to compare the total number of positive cases as shown by the plants made by the physician both on throat cultures and nose cultures as compared with the results given by the Laboratory plantings of both throat and nose cultures. Of the total number of

Digitized by Google

positive sets of cultures, 2,687, 2,011 were positive according to the cultures sent in by the physician; that is, the physicians' cultures gave 74.8% of all positives. In other words, if these cultures had been relied upon entirely for the results one-quarter of all positive cases would have been overlooked. The results obtained by reliance on Laboratory cultures alone are not as good as those obtained from the plantings made by the physician. 1,829 proved positive by the Laboratory cultures, including both the nose and the throat positive cultures. This gives 68.1% of all positives. In other words, nearly one-third of the total number of positive cases would have been overlooked if reliance had been placed upon this method alone.

In so far as we are aware this method of having cultures taken both from nose and throat and duplicating each by planting in the Laboratory as well as having the plant made by the physician has not been generally adopted. We have been surprized to find the large number of cases which would have been overlooked if this duplication of cultures had not been made. We all recognize that negative results are at times obtained in clinical cases of diphtheria, no matter how careful the technique may be. It would appear from our results that this method of taking both nose and throat swabs with duplicate plantings from each more than justifies the additional labor required. It is fully appreciated that the value of this method lies in the larger number of cultures examined and not in the fact that the duplicates were planted by the Laboratory. Presumably if duplicates had been made in each case by the physician equally good results might have been obtained.

The results above given do not include cultures made for the detection of carriers. They apply only to those made for diagnosis and for release. For various reasons we have not been able to follow out what we appreciate should be done in the case of carriers: that is, to have four cultures made in the case of each. These at times are made in such large numbers that lack of help prevents carrying out such a routine. The routine in the case of suspected carriers which are often cultured by the hundreds is to have a swab from the nose and one from the throat, each planted on a serum slant in a tube, leaving the swab in the tube until after it is incubated and utilizing the swab for making the smear. Out of 9,587 cultures for carriers 8,743 have given negative results both in the nose and throat. 151 have given positive results both in throat and nose. 183 have been positive in the throat and negative in the nose, whereas 510 have shown diphtheria bacilli present in the

Digitized by Google

nose and absent in the throat. Thus out of the total number of positive results, 844, if the throat cultures alone had been taken 334 only would have been positive; that is, 39.5%. If the nose culture alone had been relied upon there would have been 661 positive cultures, or 78.3%. These results we believe indicate that in all searches for carriers, cultures both from nose and throat are essential.

Testing Clinical Thermometers

At the last session of the General Assembly of Connecticut a bill was passed concerning the establishment of a State clinical standard thermometer. This was in recognition of the fact, demonstrated beyond question, that many of the clinical thermometers on the market are so inaccurate that they are not reliable for determining temperatures. In some cases a very large per cent. of those examined has been found to be inaccurate, though the certificate accompanying the thermometer may have shown it to be entirely accurate. Although it has not yet been possible to complete arrangements for carrying out the requirements of the law in this State, it is expected that this can be done in the very near future. It, therefore, seems desirable to make the provisions of this law known and also to publish the Specifications and Tolerances which will be in force in carrying this out. The bill as passed by the last Legislature reads as follows:

AN ACT CONCERNING THE ESTABLISHMENT OF A STATE CLINICAL STANDARD THERMOMETER

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. A clinical standard thermometer supplied by the state and certified by the national bureau of standards for use by the state, shall be the state clinical standard thermometer.

Sec. 2. In addition to the state clinical standard thermometer, there shall be supplied by the state such additional clinical standard thermometers as may be necessary to carry out the provisions of this act, to be known as official clinical standards. Such thermometers shall be verified by the director of the bureau of laboratories of the state department of health upon their initial receipt and at least once in each six months thereafter, by direct comparison with the state clinical standard thermometer. The official clinical standard thermometers may be used in making all comparisons of clinical thermometers under test.

Sec. 3. The commissioner of health shall promulgate tolerances and specifications for clinical thermometers. A correct clinical ther-

Digitized by Google

mometer shall be one which conforms to the standard hereby established and to the specifications promulgated under provisions of this act, within the tolerances established as aforesaid.

Sec. 4. Whenever the state department of health inspects and tests a clinical thermometer which is offered for sale and finds it to be correct it shall seal or mark it or otherwise certify it as correct. Whenever it inspects and tests such a clinical thermometer and finds it to be incorrect it may condemn, seize and destroy it; or it may return it to the owner upon a satisfactory guarantee that it will not be sold or used within the state.

Sec. 5. When a representative sample of a clinical thermometer has been submitted by the manufacturer thereof to the state department of health and is approved, it shall assign a designating mark or number which shall thereafter be permanently affixed by the manufacturer to all clinical thermometers of that particular kind made by him. Such clinical thermometers as are sealed by the manufacturer shall be marked with the name, initials or trademark of the manufacturer, and by such other marks as the department may require. The commissioner of health shall have power to revoke the authority given by him to any manufacturer under the provision of this section upon proof that the authorized seal or designating mark has been affixed to a thermometer which does not conform to the sample approved by him.

Sec. 6. Any person, who, by himself or by his servant or agent, or as the servant or agent of another person, shall keep for the purpose of sale, offer or expose for sale, or sell any clinical thermometer which has not been sealed, marked or certified as correct by the state department of health or by the manufacturer as aforesaid, shall be fined not more than fifty dollars.

In order to carry out the provisions of this Act special apparatus has been ordered which, it was expected, it would be possible to have installed several months since. As soon as this is completed the testing of thermometers will be taken up at this Laboratory under the following Specifications and Tolerances:

SPECIFICATIONS AND TOLERANCES FOR CLINICAL THERMOMETERS TO BE SEALED BY THE MANUFACTURER.

General.—All materials and workmanship shall be first class in every respect.

Material.—The bulbs shall be made of Corning normal, Jena 16III normal, or other approved glass that has been found equally satisfactory for thermometric purposes. The bulbs shall be approximately cylindrical. The stem shall be made of enamel-backed tubing. The tubes shall be straight, of uniform diameter and free from defects. The mercury used shall be clean and pure, and the thermometer shall be filled in such a manner that the mercury will be free from entrapped gas.

Graduation Marks and Numbering.—Thermometers should be aged for a period of not less than four months before determining the exact degree points, and should then be graduated to register temperatures in conformity with the scale of the Connecticut Clinical Standard Thermometer. The graduated scale shall be of such

Digitized by Google

length that not more than 10 degrees F. shall occupy the space of one linear inch. The graduating should be done on a good dividing engine. The marks made in pointing shall not be such as to cause a widening of the graduation lines near the center. The width of the graduation marks shall be not more than one-fifth nor less than one-tenth of the length of a graduation interval. The marks shall be regularly spaced, of uniform width, and shall be straight and perpendicular to the axis of the stem. They shall be uniformly filled with a coloring matter which is not removable by hot or cold water. The graduations shall be numbered at each even degree mark, the numbers being so placed as to be upright when the thermometer is held horizontally. The numbers shall be clear and easily legible, and so placed as to indicate definitely to which mark they belong.

Identification.—The maker's name, initials or trade-mark, and a serial number shall be engraved on each thermometer for purposes of identification, together with any distinctive name, number, or brand under which such instrument is advertised or sold.

Factory Test.—The manufacturer's standards used in testing for accuracy shall be compared with the Connecticut State Clinical Standard Thermometer, or certified by the United States Bureau of Standards and approved by the Director of the Bureau of Laboratories of the Connecticut State Department of Health. The manufacturer shall also submit to the Director for his approval two or more representative samples of each type or kind of thermometer to which he desires to affix the manufacturer's seal. These samples should comply in every particular with the specifications included in this pamphlet. When the Director approves of the samples submitted he shall assign a designating mark or number which shall thereafter be permanently engraved upon all clinical thermometers of that particular kind made by that manufacturer and shall retain one of the samples for future reference.

Before affixing the authorized seal-mark to any thermometer, the manufacturer, either by himself or by his servants or agents, shall critically examine the same for defects of construction, such as the presence of air bubbles or moisture in the mercury or in the capillary bore, cracks in the glass, defective graduations, etc. The operation of the registering device shall also be tested to see that the index is neither too easy nor too difficult to throw back, a centrifugal machine, conforming to the United States Bureau of Standards specifications, being used for this purpose, so that the same degree of force may be applied in each instance.

Thermometers which have passed these preliminary tests shall then be tested for accuracy of reading at 96°, 100°, 104°, and 106°F. (36°, 38°, 40°, and 41°C.). If the instrument is found correct within + or — 0.2°F. (0.1°C.) at all points tested, and shows no greater error on successive tests at these points, and shows no error over 0.3°F. (0.2°C.) between any two test points, the manufacturer's seal may be affixed, and the instrument may be legally sold or offered for sale in this State without further test.

Each clinical thermometer sealed by the manufacturer shall be plainly engraved with the abbreviation "Conn.", followed by the designating mark in plain capital letters or numbers, block style, not less than 1-16 inch in height. This marking shall invariably be preceded by the serial number hereinafter described.

Digitized by Google

Every clinical thermometer sealed by the manufacturer shall bear a serial number by which such thermometer may be readily identified. This number shall be legibly engraved by machine on the back of the thermometer near the mercury bulb, so as to prevent masking of the number when a metallic cap or holder is attached, and shall be of block type consistent in size with that used in the seal-mark unless some other type has been expressly approved in any particular case by the Director of the Bureau of Laboratories.

CERTIFICATION OF THERMOMETERS

In order to be certified as correct by the Director of the Bureau of Laboratories a clinical thermometer shall meet the requirements as given above under the headings of "General", "Material", "Graduation Marks and Numbering", and "Identification", and shall meet the requirements regarding lack of defects in construction, absence of air bubbles, tests for accuracy of grading, etc., as there given.

C. J. BARTLETT, M. D.,

Director, Bureau of Laboratories.

Digitized by Google

Digitized by Google

BUREAU OF ENGINEERING

July 1, 1920--June 30, 1922

Digitized by Google

Digitized by Google

BUREAU OF ENGINEERING

July 1, 1920--June 30, 1922

Digitized by Google

PERSONNEL OF THE BUREAU OF ENGINEERING

J. Frederick Jackson, Director
Joseph Doman, Assistant Engineer
Edward B. Noonan, Chief Inspector
Dewey Selander, Inspector (Student, Vocational Training, Veterans' Bureau)
Doris A. Tryon, Secretary-Stenographer

Digitized by Google

REPORT OF THE BUREAU OF ENGINEERING

John T. Black, M. D., Commissioner of Health:

I have the honor to submit the report of the Bureau of Engineering for the period July 1, 1920 to June 30, 1922.

The work of this Bureau includes the examination, approval and filing of plans, specifications and maps of public works and of private works and institutions serving the public, investigation of conditions as a result of complaint or petition, surveys of institutions, inspection of watersheds, water and sewage disposal works, and various engineering duties in co-operation with other Bureaus of this Department and other state departments.

PUBLIC WATER SUPPLIES

At the time of the organization of this Bureau five years ago, there were very few maps or plans of water works on file in this office, as up to that time such filing was optional. As the state now requires the filing of these plans and maps, with such additional information as the Bureau may request, every effort has been made to secure compliance. Considerable difficulty has been encountered in this endeavor, as many of the smaller companies do not have duplicate sets of maps and plans and, what is more astonishing, a large number have no plans or records of their works or system.

At the present time satisfactory maps and plans of about one-half the water companies of the state are on file.

Water works, both publicly and privately owned, number 101 and these supply a total of 146 communities, representing a population of 1,164,900, or approximately 80% of the total population of the state.

The sources of supply of 79 of these works are from lakes, ponds or streams; 17 are from wells or springs and 5 from both surface supplies and wells.

Ten of these water work systems protect their supply by filtration, twenty-seven by chlorination, and four by filtration and chlorination.

The communities supplied with water in the state at the present time are as follows:

Digitized by Google

Communities Supplied by Municipal Works

Bethel	Hartford	Norwich	West Hartford
Bristol	Meriden	Putnam	Wethersfield
Danbury	Middletown	Southington	Windham
East Hartford	New Britain	South Norwalk	Windsor
Forestville	Newington	Wallingford	Winsted
Griswoldville	New London	Waterbury	
Groton	Norwalk	Watertown	

Communities Supplied by Private Works

Agawam	Enfield	Naugatuck	Sound View
Attawagum	Essex	New Canaan	S. Glastonbury
Ansonia	Fairfield	New Hartford	S. Manchester
Avon	Falls Village	New Haven	Southport
Baltic	Farmington	Newington	South Coventry
Beacon Falls	Glasgo	New Milford	Sprague
Birmingham	Glastonbury	Newtown	Springdale
Branford	Glenbrook	Norfolk	Stafford Springs
Bridgeport	Granby	Noroton	Stamford
Broad Brook	Greenwich	North Canaan	Stonington
Brooklyn	Griswold	North Haven	Stony Creek
Burlington	Guilford	Orange	Stratford
Canaan	Groton Long Pt.	Pawcatuck	Suffield
Canton	Hamden	Pine Meadow	Tariffville
Cheshire	Harwinton	Pine Orchard	Terryville
Chester	Hazardville	Plainville	Thomaston
Clinton	Highland Park	Plymouth	Thompsonville
Collinsville	Huntington	Point O' Woods	Tokeneke
Cornwall	Jewett City	Portland	Tolland
Coventry	Kent	Ridgefield	Torrington
Cromwell	Killingly	Rockville	Unionville
Danielson	Lakeville	Salisbury	Warehouse Point
Darien	Ledyard	Saybrook	Washington
Derby	Lisbon	Scitico	Westbrook
Deep River	Litchfield	Seymour	West Haven
Durham	Lyme	Sharon	Westport
East Haven	Madison	Shelton	Windsor Locks
East Lyme	Manchester	Shippan Point	Woodbury
East Windsor	Milford	Simsbury	Woodbridge
Ellington	Mystic	Somers	Woodmont

Water work systems at which filter plants are operated, with the method of filtration, are as follows:

Slow Sand	Mechanical	Sand & Gravel
Cornwall	Greenwich	Litchfield
Farmington	Litchfield	Sharon
Hartford	New Canaan	
New Haven	Sharon	
Putnam		
South Norwalk		

Digitized by Google

Chlorinated Supplies

Ansonia	Greenwich	New Haven	Stamford
Branford	Groton	Norwalk	Terryville
Bridgeport	Hartford	Norwich	Thomaston
Cromwell	Manchester	Shelton	Torrington
Danbury	Meriden	Simsbury	Wallingford
Derby	Middletown	Southington	Waterbury
East Hartford	Milford	Stafford Springs	Watertown
Willimantic	Windsor	Windsor Locks	

APPROVAL OF WATERWORKS

Bristol

New reservoir in the Town of Harwinton on the Poland River.

East Lyme

Application was received April 12, 1922 from the State Tuberculosis Commission for the construction of a water supply system for the Seaside Sanitarium at Crescent Beach, the supply to be pumped from wells near Dodge Pond. Approval was granted June 20, 1922.

New Britain

Application was received September 2, 1921 from the City of New Britain for the approval of plans prepared by their consulting engineer for an additional water supply to be pumped from wells near White's Bridge into the city mains.

After review of pertinent data and inspection of the sites of the wells, approval was granted January 7, 1922.

New London

Storage reservoir in the Town of Montville on Bogue Brook.

WATERSHED INSPECTIONS

During the period of this report all watersheds were inspected and about 30% reinspected. Many of the objectionable conditions found in first inspections and called to the attention of the proper officials, had been corrected. Some nuisances, however, still continued and where persuasion or advice did not produce results, orders for their abatement have been issued either by the local or State Health authorities.

Digitized by Google

In general however, the watersheds were found in better sanitary condition than ever before. The result of a co-operative survey of selected number of water supplies by engineers from the United States Public Health Service, specific recommendations for protective measures such as the patrolling and posting the sheds, elimination of dual connections and adoption of chlorine treatment were recommended and in the majority of cases were accepted and carried out willingly by the officials in charge. The following is the list of watersheds inspected:

List of Watersheds Inspected

Town	Shed	Company
Ansonia	Beaver Brook	Ansonia Water Co.
"	Black Brook	" " "
"	No name	Fountain Water Co.
Avon	No name	Avon Water Co.
Baltic	No name	Baltic Water Co.
Bethel	Mt. Lake	Eureka Water Co.
"	Chestnut Ridge	" " "
Bridgeport	Means Brook Reservoir	Bridgeport Hydraulic Co.
"	Conduit Reservoir	" " "
"	Aspetuck	" " "
"	Easton No. 1	" " "
"	Easton No. 2	" " "
"	Hemlocks	" " "
"	Samp Mortar	" " "
"	Horse Tavern	" " "
"	Bunnells Lower	" " "
"	Bunnells Upper	" " "
"	Trap Falls	" " "
"	Beaver	" " "
"	Island Brook	" " "
"	Trumbull	" " "
"	Far Mill River	" " "
"	Canoe River	" " "
Bristol	Poland River	Municipal
Broad Brook	No name	Broad Brook Mfg. Co.
Clinton	Menunketesuck	Guilford-Chester Water Co.
Collinsville	Nepaug Reservoir	Collinsville Water Co.
Cromwell	Nooks Pond	Cromwell Water Co.
Danbury	West Lake	Municipal
"	East Lake	"
"	Kohanza Reservoir	"
"	Padanaram "	"
Danielson	Hygeia "	Crystal Water Co.
"	Chase "	Crystal Water Co.

Digitized by Google

Derby	No name	Birmingham Water Co.
Durham	Fowlers Brook	Durham Center Water Co.
"	No name	Durham Aqueduct Co.
East Hartford	Roaring Brook	Municipal
Ellington	No name	Ellington Water Co.
Falls Village	No name	Falls Village Water Co.
Farmington	No name	Farmington Water Co.
Granby	Bissell Brook	Salmon Brook Water Co.
Greenwich	Putnam Lake	Greenwich Water Co.
"	Horseneck Brook	" " "
"	Rockwood Lake	" " "
"	Pipen Brook	" " "
Groton	Groton Reservoir	Municipal
Hartford	Nepaug	Municipal
"	Reservoir No. 1	"
"	" " 2	"
"	" " 3	"
"	" " 4	"
"	" " 5	"
"	" " 6	"
Hazardville	2 Wells	Hazardville Water Co.
Jewett City	Stonehill Brook	Jewett City Water Co.
Kent	Mt. Algo	Kent School Corp.
"	No name	Kent Water Co.
Lakeville	Reservoir No. 1	Lakeville Water Co.
"	" " 2	" " "
"	" " 3	" " "
"	" " 4	" " "
Litchfield	No name	Litchfield Water Co.
Lyme	2 Wells	Hale and Hilliard Co.
Manchester	Wilsons Brook	Manchester Water Co.
"	Risley Reservoir	" " "
"	Porter "	South End Water Co.
"	Howard "	" " " "
"	Taylor "	" " " "
Meriden	Kenmere "	Municipal
"	Broad Brook Reservoir	"
"	Hallmere Reservoir	"
"	Elmere Reservoir	"
"	Merimere Reservoir	"
"	Johnson Hill Reservoir	"
Middletown	Higby Mountain	"
"	Laurel Brook	"
Milford	Beaver Brook	Milford Water Co.
Mystic	Palmer Pond	Mystic Valley Water Co.
"	Dean Pond	" " " "
"	Mistuxet Brook	" " " "
Naugatuck	Prospect	Naugatuck Water Co.
"	Straitsville	" " "
"	Long Hill Brook	" " "
"	Candee Brook	" " "
"	Mulberry Hill	" " "
New Britain	Shuttle Meadow	Municipal
" "	Whigville	"
" "	Wolcott	"

Digitized by Google

New Canaan	Five-Mile River	New Canaan Water Co.
New Hartford	Spruce Brook	Village Water Co.
" "	South Mountain Brook	New Hartford Water Co.
New Haven	Lake Dawson	New Haven Water Co.
" "	" Watrous	" " " "
" "	" Chamberlin	" " " "
" "	" Whitney	" " " "
" "	" Saltonstall	" " " "
" "	" Bethany	" " " "
" "	" Wintergreen	" " " "
" "	" Maltby	" " " "
" "	Mill River	" " " "
" "	Farm River	" " " "
Newington	No name	Natural Spring Water Co.
"	Well	Maple Hill Water Co.
New London	Lake Konomoc	Municipal
" "	Aux. No. 1	"
Newtown	Taunton Lake	Newtown Water Co.
New Milford	Reservoir 1	New Milford Water Co.
" "	" 2	" " " "
" "	" 3	" " " "
" "	" 4	" " " "
Norfolk	Lake Wanguam	Norfolk Water Co.
Noroton	Stamford Water Co.	Noroton Water Co.
North Canaan	No name	North Canaan Water Co.
Norwalk	Stauns Pond	Municipal
Norwich	Stony Brook Reservoir	"
"	Fairview "	"
"	Meadow Brook	"
Orange	Grassy Hill	Orange Water Co.
Plainville	Crescent Lake	Plainville Water Co.
Portland	Meshomasick Brook	Portland Water Co.
Putnam	Roseland Lake Res.	Municipal
Ridgefield	No name	Ridgefield Water Co.
Rockville	Lake Snipsic	Rockville Water & Aqueduct Co.
Seymour	Reservoir 1	Seymour Water Co.
"	" 2	" " "
"	" 3	" " "
Sharon	Beardsley Pond	Sharon Water Co.
Simsbury	Stratton Brook	Village Water Co. of Simsbury
"	Grimes Brook	Simsbury Water Co.
Somers	No name	Fuller & Hurd Water Co.
Stafford Springs	Roaring Brook	Stafford Springs Aqueduct Co.
Stamford	Mill River	Stamford Water Co.
Sound View	2 Wells	Sound View Improvement Co.
South Coventry	Lake Wangumbaug	South Coventry Water Co.
So. Glastonbury	Upper Reservoir	So. Glastonbury Water Co.
" "	Lower "	" " " "
Southington	Humiston Brook	Municipal
Springdale	3 Wells	Springdale Water Co.
Tariffville	Marsh Pond	Tariffville Lace Co.
Terryville	Reservoir No. 1	Terryville Water Co.
"	" " 2	" " "
"	" " 3	" " "

Digitized by Google

Thomaston	No name	Thomaston Water Co.
Thompsonville	No name	Thompsonville Water Co.
Tolland	No name	Tolland Aqueduct Co.
Torrington	North Pond	Torrington Water Co.
"	Whist Pond	" " "
"	Hatchaloosie Lake	" " "
"	Marshall Lake	" " "
Unionville	No name	Unionville Water Co.
Wallingford	Pistapaug Pond	Municipal
"	Lanes Pond	"
Washington	No name	Woodruff Water Co.
"	3 Wells	Judea Water Co.
Waterbury	Prospect Reservoir	Municipal
"	East Mt. "	"
"	Wigwam "	"
West Simsbury	Hop Brook	Village Water Co. of Simsbury
Willimantic	Hosmore Mt. Res.	Municipal
"	Natchaug Reservoir	"
Windsor	Barber Pond	Municipal
Windsor Locks	Cold Brook	Windsor Locks Water Co.
Winsted	Rugg Brook	Municipal
"	Crystal Lake	"
"	Mad River	"
Woodbury	South Brook	Woodbury Water Co.

SPECIAL WATERSHED INSPECTIONS

Conditions on several of the watersheds were somewhat out of the ordinary. A brief description of these follows:

Avon

On the initiative of the Bureau, the waterworks and watershed of the Avon Water Company were inspected December 1, 1921. Avon is a small, rural community, population about 350, practically all served by the Avon Water Company. Water is impounded from a drainage area of about 5 square miles, upon which there is considerable farming and pasturage. The number of dwellings does not exceed 30, but most of these contribute more or less direct pollution to the reservoir feeders. Occasionally the water is very objectionable on account of color, turbidity, odor and taste. B. Coli, however, was absent in a sample collected December 6, 1921. Purification effected by storage in the reservoir is practically negligible. The qual-

Digitized by Google

ity of the water would be greatly improved by filtration and, as an additional safeguard, all sources of sewage contamination should be eliminated. At the present time, however, a new supply is contemplated from Nod Brook which will drain an uninhabited watershed. When this is completed, the old supply will be abandoned.

Farmington

The water delivered by the Farmington Water Company, having been found of unsatisfactory quality, reinspections of the watershed and treatment plant were made February 10, 1922 and May 25, 1922. The company had been previously notified to place the sand filters in proper working condition, cement up the clear water basin to exclude surface drainage and repair the roof over the clear water basin. Only the latter had been done at the date of the last reinspection, although some sand had been hauled in to be placed on the filters. The company is arranging for a new issue of stock and with proceeds from the sale of this expect to carry out all the recommendations of the Bureau. When these are put into effect and the plant properly operated, the water should be of excellent quality.

Kent

Laboratory analyses showing contamination in the water, the watershed of the Kent Water Company was inspected May 31, 1922. The reservoir is normally fed by springs, but during rains receives the drainage from several acres of uninhabited watershed. The reservoir is adjacent to a main highway and receives considerable surface wash from a side hill. A ditch, however, is provided to carry this wash below the spillway of the reservoir. It is quite possible, however, for some of the road drainage to enter the reservoir. The only other possible source of contamination would be from persons crossing the watershed. Water from a well protected spring on the side hill south of the reservoir is piped directly into the mains. Additional supply is secured by damming a small mountain stream and piping the water into a small reservoir, thence into the mains.

Mystic

At the request of the Health Officer of Groton, inspection was made of the watershed of the Mystic Valley Water

Digitized by Google

Company, June 7, 1922. For a number of years the Company had provided places for picnic parties and at the time of inspection a considerable part of the watershed was being used for this purpose. Garbage incinerators, benches, fireplaces, and sometimes tables were provided and the grounds very well kept, but there were no toilet or lavatory facilities and pollution of the shed consequently inevitable. To protect public health, therefore, it was recommended that picnicking be discontinued or the supply made safe by installation of proper toilets and lavatories, chlorination of the water and placarding and patrolling the watershed. The Health Officer of Stonington, under-whose jurisdiction the matter properly comes, was verbally informed of these findings soon after the inspection and issued an order forbidding picnicking on the shed. This order was approved by the water company whose officers gave every assurance that they would co-operate in seeing that it was enforced.

Putnam

Pollution of Roseland Lake, Roseland Park, by bathing and boating was investigated, and the Health Officer was advised that the practice was considered detrimental to health. In view of the fact that the city was preparing to install a chlorinator, orders forbidding these sports were not recommended.

Rockville

Complaints having been made to the State Department of Health concerning the pollution of a brook on the line between the land occupied by John Knybel and Michael Gallivan, on Crystal Lake Road, in the town of Tolland, which brook flows into Snipsic Lake, a part of the water supply of the City of Rockville, the Commissioner of Health issued a call for a public hearing under the provisions of Sec. 2530 of the General Statutes, at which all persons interested in the Rockville Water Supply and the properties involved would be given an opportunity to show cause why such pollution should not be ordered abated.

The call for the hearing to be held in the office of the Commissioner of Health, Room 13, State Capitol, Hartford, at 3 P. M., Friday, November 11, 1921, was advertised as required by law in the newspapers of Tolland County and copies of the call were sent to Mr. John Knybel, Mr. Michael

Digitized by Google

Gallivan, Judge M. D. O'Connell, County Health Officer for Tolland County, Mr. C. S. Hurlbut, Health Officer of the Town of Tolland, The Rockville Aqueduct Company, The Rockville Journal and The Rockville Leader.

Members of the Public Health Council, Judge M. D. O'Connell, Mr. C. S. Hurlbut, Mr. A. T. Thompson, Superintendent of The Rockville Aqueduct Company, and residents of the town having assembled in the office of the Commissioner of Health at the time advertised, the call for the hearing was read and the hearing opened by the Commissioner of Health and testimony taken from a number of witnesses.

The Council then went into Executive Session and as a result, the Commissioner issued the following order:

"Mr. John Knybel,
Crystal Lake Road,
R. F. D., Rockville,
Connecticut.

Sir:

The State Department of Health by the Commissioner of Health has complied with Section 2530 of the General Statutes by fully investigating a source of water supply for the City of Rockville on or adjoining the premises in the Town of Tolland now occupied by you, and by granting a hearing, which hearing was held on the eleventh day of November 1921, and by notifying you of the same.

The State Department of Health by the Commissioner of Health finds that said source of water supply is contaminated by reason of the diversion of the flow of a stream from its natural course onto land now occupied by Michael Galivan.

You are hereby ordered and directed to remove any and all obstructions placed or permitted to be placed by you in the bed of said stream and to repair or fill in any channels or trenches made by you or which have resulted from your act in diverting the stream from its natural channel.

This order must be complied with on or before the seventh day of December, 1921.

(Signed) JOHN T. BLACK,
Commissioner of Health".

Digitized by Google

No attention having been paid to the matter, the County Health Officer on January 11, 1921 was notified as follows:

"Judge M. D. O,Connell,
County Health Officer,

Stafford Springs, Conn.

Dear Sir:

In accordance with Sec. 2533 of the General Statutes, it becomes my duty to refer you for further action, the Knybel case. Mr. Knybel has not complied with the order issued by this Department and has not taken advantage of the thirty day appeal.

Enclosed are copies of order sent Mr. John Knybel, and reports of the Health Officer, Mr. Hurlburt, and our inspector.

Yours very truly,

(Signed) JOHN T. BLACK,

Commissioner".

On April 6, he advised the Commissioner that he proposed to bring Knybel into court on a bench warrant for violating the order of the Department. There was some delay in proceedings, due to the fact of Knybel being arrested on other charges, but the matter was finally settled by Knybel restoring the brook to its original course.

Later on, the following orders were issued in relation to the Leonard and Martin properties on the same shed, and copies were furnished the County Health Officer:

"Mr. Oscar Leonard,
Tolland,
Conn.

Sir:

It has come to the attention of this Department that you are maintaining a sewer pipe leading from a house toilet on property owned or occupied by you located on a source of public water supply in the Town of Tolland, the discharge from which constitutes a nuisance and is prejudical to said supply.

Under the provisions of Section 2545 of the General Statutes, I, John T. Black, Commissioner of Health, hereby order and direct that said nuisance be removed or abated on or before July 3.

(Original Signed) JOHN T. BLACK,

Commissioner of Health".

Digitized by Google

On June 18, 1922, the following letter was sent to the President of the Rockville Water and Aqueduct Company:

"Mr. David A. Sykes, President
The Rockville Water & Aqueduct Co.,
Rockville, Conn.

Dear Sir:

Mr. Jackson has referred to me your letter of June 8th relating to the conditions surrounding the Rockville water supply.

I recall that the watershed conditions were gone over rather thoroughly at the recent conference in the Hartford Club, at which time we proffered our assistance. It will be legal and proper for us to issue orders you have mentioned in your letter and will do so at an early date.

There are other conditions which seriously menace your supply which should receive as energetic treatment. For example: The Belding Bros. Silk Mills and the American Mill of the Hockanum Mills are connected to your high service system without check valves. These should be immediately ordered. The other urgent proposition is the general chlorination of the water supply which I understand has not been accomplished and which, I believe, was agreed upon at our meeting in the Hartford Club.

The orders against the place on the watershed will be issued this week. We will take no action regarding the check valves until we hear from you and I hope you will consider the chlorination at an early date.

I might add that in ordering check valves, we do not indorse check valves as perfect protection. In fact we encourage the separation of fire systems from public systems altogether. If this can be accomplished in these two mills it would be still better than ordering the check valves.

Very truly yours,

(Signed) JOHN T. BLACK,

Commissioner".

Unionville

On the initiative of the Bureau, an inspection was made of the watershed of the Unionville Water Company on May 25, 1922. This shed is about 1 square mile in area. About half of it is woodland, the rest being used for farming and pasturage. There are 6 residences and 8 barns on it. The total resident population is about 40 and there are about

Digitized by Google

50 head of stock. Conditions around the houses and barns were, in general, unobjectionable. The water from two spring fed brooks is impounded in two reservoirs. From the reservoirs the water is distributed by gravity to Unionville. Possible sources of pollution wash from pasture and cultivated lands and drainage from the Unionville-Collinsville Road. A sample collected April 6, 1922, showed the water to be of low bacteriological content and B. Coli was not isolated.

During the inspection, the presence of two typhoid patients, one on the shed and the other just off of it, were noted, and upon investigation it was found that proper precautions were being taken in disposing of the excreta from them.

Wallingford

At the request of the local authorities, inspection was made May 11, 1922, of Paug Pond on the watershed of the Wallingford Waterworks. Evidence of cattle pollution from the Bartholomew property, which borders the pond, was found. There was also evidence of fishing from the banks of this property. It would be advisable for the waterworks to purchase this property and efforts have been made toward this end. Agreement could not be reached with the owners, however, on a satisfactory sales price and the Borough Attorney has been authorized by the local officials to institute condemnation proceedings. The Bureau was later informed that this property was purchased by the Waterworks.

The gate house, pump house and chlorinator of the waterworks were also inspected May 11, 1922 and found to be in satisfactory condition.

WATER SUPPLY CHLORINATORS

The Bureau planned to make chlorinator tests at different seasons of the year, in order to obtain information as to general dosage requirements throughout the State, but much of the work planned had to be abandoned for other more urgent work on account of the limited personnel and appropriation. Chlorination is depended upon almost entirely by a number of waterworks to make their supply safe. The importance of these tests is, therefore, apparent, particularly as there is no control of dosage of most of the supplies by daily chemical or bacteriological tests. Field

Digitized by Google

tests by the Bureau would be of considerable benefit to the operators in familiarizing them with the use of either starch iodine or orthotolidin as indicators of the sterilization point.

The few tests made by the Bureau were on surface supplies impounded in reservoirs. The amount of chlorine was varied and for each dosage rate the water tested by either, and sometimes both, the above tests for excess chlorine and samples taken for bacteriological analyses. Complete sanitary analyses would have been of great value but owing to necessary curtailment of laboratory work, samples were not taken for these. It is interesting to note that the bacteriological results in each case checked the field determination of the sterilization point by the excess chlorine test. For clear waters it is recommended that waterworks operators use the orthotolidin test because of its simplicity, but for highly colored or turbid waters or sewage, the starch iodine test is preferable. The following table shows the sterilization points obtained:

Date	Supply	Chlorine Dosage Required For Sterilization: Parts Per Million	Chlorine Dosage Required For Sterilization: Pounds Per Million Gallons
October 22, 1921	Norwich	.48	4.0
December 14, 1921	Willimantic	.60	5.0
January 10, 1922	Putnam	.58	4.8
January 31, 1922	Thomaston*	.78	6.5
April 25, 1922	Cromwell	.30	2.5
April 26, 1922	Manchester	.31	2.6
May 29, 1922	Windsor Locks	.34	2.8

*Emergency Hypochlorite Plant.

At a rough approximation, proper chlorine dosage for Connecticut waters may be expected to vary from 2 to 8 pounds per million gallons according to temperature and organic content of the water. The following is a brief summary of the chlorinator inspections:

Branford

On the initiative of the Bureau, inspection was made December 7, 1921 of the new pedestal type chlorinator under experimentation by the New Haven Water Company at their reservoir near Branford. This type of chlorinator operates on the principal of drawing chlorine from the cylinder by means of a vacuum, then mixing with water

Digitized by Google

and feeding the chlorine solution into the mains. The compensator valve, which has been a source of trouble in a number of installations, is done away with in the new type.

Cromwell

At the request of the Cromwell Water Company inspection was made April 25, 1922, of their four reservoirs, pump house and chlorinator and a field test of the latter made. Samples of water were collected for bacteriological analyses from the reservoirs and after chlorination. The water in the reservoirs was found badly polluted, the sources of pollution being surface drainage from pasture lands, road drainage and a large overflowing cesspool. Proper sterilization of the water was secured at the time of the test with about 2.6 pounds chlorine per million gallons of water. It was recommended that a dosage rate of 2.9 lbs. per million gallons be maintained, to be varied depending upon subsequent analyses.

Considerable algae being noticed in the water in the reservoirs, copper sulphate treatment was recommended and instructions were furnished the waterworks operator as to the amount of copper sulphate and method of applying it.

Manchester

On the initiative of the Bureau, the reservoirs and chlorinator of the Manchester Water Company were inspected April 26, 1922, and samples of water secured for analyses. The water in both the upper and lower reservoirs was found polluted, probably from pasture lands and road washings during rains. Chlorination at the rate of 2.6 lbs. chlorine per million gallons produced proper sterilization, destroying all the B. Coli greatly reducing the number of other bacteria in the water.

Manchester

At the request of the Manchester Water Company, the chlorinating apparatus was inspected September 19, 1921, and reinspected December 15, 1921. The apparatus is of the dry feed, manual control, orifice flow meter type. When placed in operation August 1921, chlorine was applied to the water at the extremely high rate of 20 pounds per million gallons, resulting in objectionable tastes. Al-

Digitized by Google

though the chlorine was cut to 10 pounds per million gallons and later to 6 pounds, the taste still persisted. Upon recommendation of the Bureau, the rate was cut to 3 pounds per million gallons. This rate was apparently satisfactory, as no complaints from taste developed and analyses indicated the water to be of satisfactory bacteriological content. Due to a broken diffuser, the chlorinator was not operating during the inspection of December 15, 1921. This condition, however, was remedied shortly after that date.

Middletown

On the initiative of the Bureau, inspection was made of the Mt. Higby Reservoir and chlorinator on April 27, 1922. The sides of the reservoir and land in the vicinity appeared well kept and no objectionable conditions were observed. About two weeks prior to the inspection, the reservoir had been treated with copper sulphate. The water was clear and apparently quite free from algae growths. The reservoir is copper sulphated during the warm weather every four to six weeks, an average of 700 lbs. copper sulphate being used each treatment. This will provide a dosage rate of from 2.3 to 4.5 pounds per million gallons depending on whether the reservoirs are full or half full, respectively. These rates will probably be effective in killing off the more usual forms of microscopic organisms.

The chlorinator was found to be in poor condition, it being impossible to provide a greater dosage than 2.8 pounds of chlorine per million gallons. Depending primarily upon the condition of the water and season of the year, proper chlorine dosage to secure sterilization will vary roughly from 2 to 8 pounds per million gallons for Connecticut waters impounded in reservoirs. It is apparent, therefore, that the defective chlorinator at Mt. Higby will not provide adequate protection at all times. The Bureau was advised that the city officials are contemplating installing a new chlorinator in the near future. This should be done as soon as possible.

Norwich

At the request of the waterworks officials, the Fairview and Stony Brook chlorinators were inspected on October 22, 1921. Both installations were in excellent condition and were functioning properly. Chlorine was applied at

Digitized by Google

each plant at the rate of 6 pounds per million gallons. Starch iodine tests indicated this dose to furnish a considerable excess of free chlorine after at least 5 minutes contact and it was recommended that the dose be cut to 4 pounds per million gallons. Regular monthly analyses consistently indicate the chlorinated water to be of satisfactory bacterial content.

The Stony Brook chlorinator is of the solution feed, automatic control, orifice meter type and is pumped into the mains against a pressure of 80 pounds per square inch by a small flutter valve pump maintaining a pressure of 230 pounds per square inch. A recording venturi water meter is connected with the chlorinator.

The Fairview chlorinator is of the dry feed, automatic control, orifice meter type. A recording venturi water meter is also connected with this chlorinator.

Putnam

On the initiative of the Bureau, the Putnam Waterworks were inspected January 10, 1922 and a test made of the chlorinator. Water is piped from a reservoir on the Little River to slow sand filters, chlorinated and pumped into the mains and equalizing reservoir. Consumption has exceeded the capacity of the sand filters, the average rate of filtration to meet consumption being 4,500,000 gallons per acre per day. This is more than twice the proper rate of filtration and occasionally the filters are by-passed. The usual dose of chlorine is 6 pounds per million gallons. At the time of testing the chlorinator, efficient sterilization was secured with 4.8 pounds chlorine per million gallons.

Southington

At the request of the Superintendent of Waterworks, inspection was made on February 7, 1922, of the waterworks chlorinator, which was put into operation in January 1922. The chlorinator house, which is of reinforced concrete construction, is located about 500 feet below Reservoir No. 2 from which the water is distributed to the town through gravity mains. The chlorinator is of the dry feed automatic control, orifice flow meter type. A recording venturi water meter is installed in connection with the chlorinator. The entire installation was in excellent condition at the time of inspection. Chlorine is applied to

Digitized by Google

the water at a rate of 1½ pounds per million gallons. Although analyses indicate the water to be of satisfactory bacterial content with this dosage it is possible that this amount may be too low to insure efficient sterilization at all times.

Stamford

On October 26, 1921, inspection was made of the proposed new water supply of the Stamford Water Company, to be formed by impounding surface streams in a new reservoir. The only work being done at the time was the building of roads and location survey of the dam. The present waterworks were also inspected and it was found that proper precautions were taken to maintain the shed in good condition. At the time of inspection, the chlorinator was functioning properly, the dosage rate being 7-10 part per million of chlorine or 5.8 pounds per million gallons.

Thomaston

Due to continued withdrawal without replenishment from rainfall of the water in the Thomaston reservoir, the water company officials and local health officer requested aid of the Bureau in providing a sterilizing plant for an emergency supply to be pumped directly into the mains from the heavily polluted Naugatuck River. Accordingly a hypochlorite disinfecting plant was designed and constructed under the supervision of the Bureau. Upon completion of construction, January 31, 1922, the hypochlorite plant was tested and found to be capable of properly disinfecting the water, using about 20 pounds of hypochlorite of lime per million gallons of water. This rate is equivalent to 6.5 pounds chlorine per million gallons or 0.8 parts per million. Fairly heavy rainfall the first three days in February added materially to the amount of water in the reservoir of the Water Company so that the emergency supply was not required. Should such an emergency again occur, however, the hypochlorite plant can be quickly assembled and put into operation. Written instructions for operation were left with the water company officials and the local health officer.

Digitized by Google

Willimantic

On the initiative of the Bureau, inspections were made of the chlorinating apparatus of the Willimantic Water Works on October 17 and December 14, 1921. The apparatus is installed at the waterworks pump house and is of the solution feed, manual control type. Chlorine is applied at the intake end of the pump suction line. Some trouble had been experienced in operating the chlorinator due to breakage of some of the parts, but by keeping a supply of duplicate parts always on hand, this trouble has been eliminated and the apparatus was in good condition when inspected. The regular dosage is about 2½ pounds chlorine per million gallons. On December 14, 1921, the starch iodine test indicated that a dosage of 5 pounds chlorine per million gallons was required for sterilization and accordingly the rate was increased to this figure. A number of complaints from taste resulted, and after several days operation at the higher rate, the dose was cut down to the former rate. Apparently this rate is effective as regular monthly analyses show the water to be safe for drinking purposes.

Windsor Locks

At the request of the officials of the Windsor Locks Water Company, inspection was made May 29, 1922, of a contemplated additional water supply, the water company contemplating securing the watershed of the abandoned State Fish Hatchery. The shed is adjacent to the city on the south and west, Kettle Brook being the main stream. It has a drainage area of about one square mile of practically uninhabited woodland. The watershed was found to be well located and in good condition and if properly developed should furnish an additional supply which will meet the demands of the borough for some time to come.

On the same date, the pump house and chlorinator were inspected and found to be in good condition. Tests were made of the chlorinator by varying the dosage rate and testing for excess chlorine with orthotolidin after five minutes contact, a sample for bacteriological analyses being secured for each dosage rate tried. Both the orthotolidin and bacteriological tests indicated that the minimum practical sterilizing dose was 2.8 pounds chlorine per million gallons. This is the usual dosage rate maintained by the

Digitized by Google

company. The experience of the Windsor Locks Water Company is that a rate greater than the above results in complaints from taste, whereas, no complaints are received when the above rate is used.

SPECIAL INVESTIGATIONS—WATER SUPPLIES

Many requests for information concerning water supplies have been answered by telephone or letter but a considerable number have required field investigation by our engineering force. These are summarized as follows:

Ansonia

On initiative of the Bureau inspection was made December 13, 1921 and samples secured for analysis from the following private wells:

Louis Alter, 51 Central St.
Oscar Cohen, 55 Central St.
James McKeon, 69 Central St.
John Geloso, 9 Front St.
Camile Lombardi, 73 Powe St.
N. Alessio et al, 81 Powe St.
Morris Brody, 535 Main St.
John Doyle, 18 Columbia St.
Swardya and Koscuiski, 42 Coburn St.

All the wells were exceptionally well constructed and with the exception of one well, the sanitary surroundings were excellent. Upon bacteriological analyses, the water from all the wells was found of excellent quality, the total bacteria per c. c. on agar at 37°C ranging from 0 to 12, no B. Coli being found in any of the samples. The above results show very clearly that with proper location and construction an excellent quality of water can be secured from wells.

Branford

July 1, 1920, in company with the Health Officer, inspected general sanitary conditions at the Double Beach House and a sample of the well was taken for analysis. General conditions at this place were found to be considerably improved over those of September 1919. Certain additional instructions were given to the proprietor who agreed to see that they were carried out, and the Health Officer closed and sealed the well pending the result of future analyses.

Digitized by Google

Bristol

Well on property of Joseph Tatro was inspected, samples collected for analyses and recommendations made which were carried out by the owner.

Chester (Camp Hazen)

Upon request of the Y. M. C. A. inspection was made of their Camp Hazen on May 19, 1922. Samples of the camp water supply furnished by two wells gave evidence of contamination, which the inspection showed to be probably due to surface drainage. Instructions were left as to how this could be eliminated. A suitable location for a lavatory with water flush fixtures was pointed out and a site also selected for a sewage disposal system consisting of a septic tank and leaching chambers. A contract had already been let to install these improvements before opening the camp in July.

Colchester

At the request of the local Health Officer, inspection was made May 29, 1922 and samples of water secured for analyses from the following wells:

Ransome School	Mike Levine
H. Mintz	Harry Gilman
Mrs. Dora Stock	H. Rosenfelt
Tornigal Grocery	

Sanitary conditions in the vicinity of the wells were found to be very poor and upon analyses the water from all the wells was found to be unsatisfactory for drinking purposes. The Health Officer was advised of proper remedial measures to improve conditions and a set of tentative general regulations pertaining to construction of wells, cesspools, privies, etc., was prepared.

Colchester

On the initiative of the Bureau, inspection was made October 20, 1921 of the well on the property of D. Goldberg used for drinking purposes at the railroad station. The water was found to be contaminated and upon notifying the railroad officials, the use of the well was discontinued.

Digitized by Google

Danbury

Spring on Weindorf property used by the Myra Brook School. The use of water from this spring by the school was, as a result of inspection, discontinued.

East Haddam

On the request of Mr. Charles Baker, inspection was made June 29, 1922 of his well, which was used to a considerable extent by the local and travelling public. The well was found to be poorly constructed and subject to contamination from surface drainage and possibly from a cistern, which had recently been put into operation as a cesspool. Mr. Baker was informed as to proper changes in construction of the well and told to abandon and clean out the cistern, sprinkle it freely with chloride of lime, turn over the earth on the bottom, sprinkle again with chloride of lime and fill it in with clean earth. Instructions were also given as to proper method of sewage disposal for his residence.

East Hampton

At the request of officials of the Summit Thread Co. a field investigation was made May 26, 1922 for the purpose of assisting the company in securing a drinking water supply for their 200 employees, their former supply from deep wells having failed. The company was advised to take water from Lake Pocatapaug at a point about 1,000 feet from the mills, filter it through a gravity sand filter, then pump to a storage tank within the building. Plans of the sand filter were furnished the company.

East Hartford

Upon complaint of a resident of Governor Street that water supplied by the East Hartford Water Co. contained sediment and worms, inspection was made July 11, 1921. It was found that the water was being drawn from a new reservoir and that there had been considerable flushing of dead ends and fire hydrants. After finishing this work the quality of the water returned to normal. A reinspection April 27, 1922 showed the water to be of excellent appearance.

Digitized by Google

East Hartford

Upon report from the local health officer that Mike Navella of East Hartford had contracted typhoid fever and that his water supply was suspected as being polluted, inspection was made Nov. 17, 1921. The well was a shallow driven pipe in swampy ground and open to pollution from the sink drain and possibly a privy. The officials of the East Hartford Water Works were informed of conditions and suitable financial arrangements were soon made and the mains of the system extended shortly afterwards to serve the property of Mr. Navella and about 15 others. The well was abandoned directly after the inspection. The local health officer was informed of the situation.

East Hartford

At the request of Joseph Maulucci, inspection of his premises, particularly the water supply, was made Feb. 9, 1922. Sickness in the family was attributed to the water. The supply is derived from a shallow driven pipe in the cellar. Two cesspools, one for sink drainage, the other for toilet wastes were located about 25 feet from the well. The entire vicinity is swampy land and there is a possibility of polluting the well, particularly during rains. A sample taken Feb. 21, 1922, however, showed only 4 bacteria per c. c. but B. Coli were isolated in 10 c. c. The East Hartford Water Co. could extend their pipes to serve this property but Mr. Maulucci is unable to pay his share of the cost of the work. He was instructed by the inspector to relocate his sink drain, a suitable site being pointed out to him, to discontinue the use of the bowl serving as a toilet during the winter and requiring the cesspool for disposal; and instead to use the ground privy now installed, which is properly located; also to relocate the well to avoid the pollution in the ground from the cesspools. The local health officer was informed of the entire situation.

Essex

On the initiative of the Bureau, inspection was made of the water supply of the Pratt and Tiley Factory, January 20, 1922 under the impression that the firm had a private water supply for their 350 employees and their company houses. It was found that the company was not selling water, but on the contrary, purchasing their water from the Guilford Chester Water Company.

Digitized by Google

Farmington

Several inspections were made as a result of the complaints as to water supply and sewage disposal conditions at Oakland Gardens, on the watershed of Reservoir No. 1 of the Hartford Water supply. This section was opened as a private real estate development, special financial inducements being offered to attract people to buy land and build houses and thus avoid the payment of the very high rents prevailing at the time. As a result there are now about 30 houses on the tract, most of which are of cheap ramshackle construction occupied by people with small incomes many of whom have been out of work during the business depression. There is no public water supply or sewage system, each tenant being required to look after his own interest in these respects. The underlying rock formation is such that obtaining water and proper sewage disposal is a difficult and expensive problem. Most of the water is now obtained by a leak from a main of the Hartford water supply, a small brook which disappears during dry weather, and one or two neighboring wells. Sewage disposal is by makeshift ground privies, most of them giving off odors and accessible to flies. If permitted to develop further, this section will become an eyesore to the community. It is suggested that the town pass an ordinance that no permits for new buildings be granted unless adequate water supply and sewage disposal can be obtained. If passed, publicity should be given to such an ordinance so that prospective purchasers of property may be able to protect their own interest and not be taken advantage of by promoters of real estate developments.

Forestville

No information being on file with the Bureau pertaining to the water supply of Forestville, the village was visited Feb. 10, 1922. It was learned that up to about twenty years ago water was supplied by the Taitley Water Co. Due to an outbreak of typhoid at that time, traceable to the water, the supply from the Taitley Water Co. was discontinued and for the last twenty years the village has purchased its water from the city of Bristol.

Digitized by Google

Hamden

At the request of the Dairy and Food Commissioner, inspection was made October 31, 1921 of the Cherry Hill Spring owned by Frank Morrow. Analyses during September and October 1921 indicated that the water was contaminated. Evidently sticks, leaves and miscellaneous foreign matter and perhaps the migration of a large number of frogs to the spring account for the pollution. In general, the spring was well located and construction of the spring pit and housing fairly good. Several inprovements in construction, however, were suggested. These were put into effect and analyses thereafter consistently indicated the water to be of excellent quality for drinking purposes.

Ivoryton

Upon the initiative of the Bureau inspection was made Jan. 20, 1922 of the water supply of Comstock and Cheney. This company furnishes drinking water to 250 employees in the main factory. The supply for this factory was found to be a spring, well located with a properly constructed collecting basin and housing. Great care is taken to maintain the surroundings of the spring in the cleanest possible condition. No sources of possible pollution were evident. Upon chemical and bacteriological analyses the water was found to be of excellent quality for drinking purposes. The supply for the other factory and the 70 company houses is obtained from the Guilford Chester Water Company.

Kent

On the initiative of the Bureau inspection was made June 1, 1922 of the water supply and sewage disposal for the Kent School for Boys. Drinking water is piped from a properly protected spring on the side of Mt. Algo, and water for cooking, washing and flushing toilets is pumped from Macedonia Brook to a 35,000 gallon concrete reservoir. The brook water, however, is not suitable for drinking purposes without proper treatment. The present dual system is objectionable and some of the brook water is ununqestionably used for drinking purposes. The water supply problems of the institution can be best solved by passing the brook water through a slow sand filter.

Septic tanks are provided for the sewage from the various buildings, the effluent discharging into the Housatonic

Digitized by Google

River. The tanks are rather poorly constructed and do not function very well. It would be advisable to install a properly designed septic tank in a central location, connect all buildings to it and discharge the effluent at a point in the channel of the Housatonic River where it would receive proper dispersion.

Garbage was formerly fed to pigs, but as the pigs have been sold, the school has a garbage disposal problem on its hands. It is suggested that the garbage be given or sold to farmers to feed to pigs.

Litchfield

Inspection was made of a well on the White property used as a camp site for the Governor's Foot Guard. A sample of the water was collected and analyzed. The inspection showed no evidence of contributing pollution but the analysis did and it was advised that the use of the well be discontinued until additional analyses showed favorable.

Madison

At the request of the State Bureau of Child Welfare, the well and vicinity on the property of Mrs. Louise Gleichmann were inspected March 16, 1921 and reinspected Nov. 18, 1921. Repeated analyses of the water indicated it to be of satisfactory bacterial content, but chemically the water showed evidence of past pollution. The pollution was apparently due to a heavily manured barnyard and corral within 250 feet of the well and slightly uphill from it. The barnyard and corral have been on the property at least 40 years. Natural filtration through the soil has been apparently effective in removing the bacteria so that the water is of satisfactory bacterial content.

Madison

At the request of the State Bureau of Child Welfare, reinspection was made of the well and the vicinity on the property of Wm. B. Coe to determine the cause of unfavorable bacteriological analyses. Original inspection was made April 5, 1921. The well, of the dug type, open top provided with an "old oaken bucket" was located practically in the middle of the barnyard. Conditions were such that pollution of the well, as constructed, was practically

Digitized by Google

unavoidable. At the time of the reinspection, a driven well, the point of which was about four feet below the bottom of the dug well was used for water supply, the dug well having been abandoned. Analyses indicated that the water from the driven well was safe for drinking purposes.

Middletown

September 14, 1920, owner of well on Brower property was advised to clean out well, have another sample analyzed and if it did not show improvement, change the location of the cesspool.

Milford

Upon request of the Dairy and Food Commissioner, inspection was made October 31,1921 of the Camp Meeting spring owned by Mr. Chas. J. Rogers. The spring basin was well housed and protected against the entrance of surface drainage. The spring is at least one mile below the nearest habitation or pasture land. Analyses, however, indicated slight contamination. This might have been due to accidental contamination by people entering the spring house or by animals burrowing into the pit, or by frogs reaching the pit after passing through pasture land. Upon recommendations of the Bureau the pit was disinfected with chloride of lime. Subsequent analyses showed very low counts of bacteria but occasionally B. Coli were isolated from 10 c. c. portions. A barrel sand filter should be effective in placing this water entirely beyond suspicion.

North Canaan

At the request of the local health officer, the North Canaan water supply was inspected Dec. 1, 1921. There are two sources of supply, a spring fed reservoir about a mile northeast of the town and a large shallow well within 500 feet of the grossly polluted Blackberry River. There are no habitations on the reservoir watershed and apparently the only source of possible contamination of the supply would be by persons or animals traversing the watershed. It was feared by the local authorities that pollution from the Blackberry River might find its way into the well. Bacteriological analyses of the well water, however, indicate that this is extremely unlikely. The well is apparently adequately protected against pollution from surface drainage.

Digitized by Google

North Haven

At the request of the Dairy and Food Commissioner, inspection was made October 31, 1921 of the spring of Mrs. Timothy Bishop, as previous analyses had indicated the water to be contaminated.

Inspection showed that this was due to pasture drainage. Instructions were left to discontinue pasturing in the vicinity of the spring and changes in construction and housing of the spring basin were pointed out to protect against the entrance of surface drainage during rains.

After putting these measures into effect, analyses consistently indicated the water to be suitable for drinking purposes.

Norwich

At the request of the local health officer of Norwich, inspections were made of the Beebe Dairy Farm near Norwichtown by the Bureau on Dec. 28, 1921, Jan. 16, 1922 and Feb. 9, 1922. The barn was found to be in a very insanitary condition and the water supply for the cattle grossly polluted. The supply was derived from a spring augmented by tapping an underdrain receiving cesspool seepage from the property adjoining Mr. Beebe's on the north. It was established that one of the residents on this property had contracted typhoid about a year prior to an outbreak in Norwich which occurred early in December, 1921. Milking containers were not sterilized at the Beebe farm but were often rinsed in the polluted water from the spring thus affording opportunity for the contamination of the milk, which was not pasteurized.

Shortly after the outbreak, Mr. Beebe was prohibited from selling milk until his barn was placed and maintained in a sanitary condition and he obtained a new unpolluted water supply for his cattle. The inspection of Feb. 9, 1922 showed that the barn had been considerably altered and was in very good condition. To date no information is available as to whether a new water supply has been obtained or not.

In order to avoid possible contamination of the milk produced at the Beebe farm, the owner of the property on the north has installed a new sewage disposal system consisting of a septic tank, siphon chamber and tile underdrains. The system is so located as to avoid seepage into the spring.

Digitized by Google

Saybrook Point

On the initiative of the Bureau, inspection was made October 20, 1921 of a well at Saybrook Point, which had previously been ordered discontinued for train service as the water did not meet the U. S. Treasury standards. It was found that the railroad was not using the well but a number of small boats, mostly tugs, were. The parties interested were notified to discontinue the use of the well.

Stamford

On October 26, 1921 inspection was made of the water supply of Stamford Hall. The private supply pumped into storage tanks from a nearby stream, was found to be polluted and was therefore discontinued and connection was made with the supply of the Stamford Water Co.

Suffield

Inspection was made of the Suffield water supply, November 21, 1921 and June 19, 1922. The supply, which is owned by the Northern Connecticut Light and Power Co., is obtained from two four-inch driven wells 235 feet deep, the top six feet being encased in concrete. The wells are so located and constructed that there is practically no liklihood of pollution entering the water. The water, upon frequent analysis, has been found consistently free from sewage organisms although during the warmer months the bacterial content has sometimes been very high. It is believed however, that the high bacterial counts were due to growth in transit to the laboratory and are not representative of the quality of the water as delivered from the wells. A standpipe 30 feet in diameter and 85 feet high, with an open top is provided in the distribution system.

Windham

On the request of the Town Health Officer, inspection was made May 16, 1922 of a well in course of construction in the basement of a new school building in Windham Center. Although the well was to be properly constructed it was feared that future sewers may be laid in the vicinity of the well, and, becoming leaky, pollute the water. An actual case of this kind has previously come to the attention of this Department. The local authorities were therefore advised to abandon the basement well and

Digitized by Google

construct a new one in a suitable location in the school yard.

Wolcott

The wells on South and Woodtick School properties were inspected and samples collected for analyses. Changes were recommended at the Woodtick and the use of the South School well condemned.

Woodbury

At request of the Health Officer an inspection was made of the Ekberg Farm. This farm is located on Bear Brook one of the feeders for the Woodbury Water Company's supply. The drainage from a manure pile, pig pen, and privy was entering the brook. On account of the location of this farm the Water Company was advised to buy it to protect their water supply. This was done and the premises placed in sanitary condition.

Woodstock

At the request of the Y. M. C. A. officials, inspection was made June 22, 1922 of the spring and well to furnish water to Camp Woodstock, both having been found by previous analyses to be contaminated. Inspection showed the contamination to be due to improper construction and recommendations were made so that extraneous matter would be excluded from the water. These recommendations were put into effect and the water should be of satisfactory quality for drinking purposes. Well analyses were made of samples from wells at the following places:

Andover (3)
Ansonia (14)
Avon (3)
Bethel (1)
Bethlehem (6)
Bloomfield (3)
Branford (7)
Bridgeport (3)
Brookfield
Brooklyn
Bristol (3)
Burlington (4)
Canaan (2)
Canton (2)
Cheshire (5)
Chester (3)
Groton (13)
Guilford (4)
Haddam (2)
Hamden
Hampton (2)
Hartford (7)
Huntington (2)
Kent (3)
Killingly (3)
Killingworth (11)
Lebanon (2)
Litchfield (9)
Lyme
Madison (18)
Mansfield (7)
Marlborough
Putnam (2)
Redding (2)
Ridgefield (5)
Roxbury (1)
Salem (2)
Salisbury (2)
Saybrook (7)
Seymour (6)
Southington (3)
South Windsor
Sprague (4)
Stafford
Stamford (9)
Sterling (2)
Stonington (16)
Stratford (2)

Digitized by Google

Colchester (8)
Columbia (4)
Cornwall (3)
Cromwell (5)
Danbury (9)
Darien
Derby
Eastford (2)
East Granby
East Haddam (6)
East Hampton (6)
East Hartford (3)
East Haven
East Lyme (10)
East Windsor
Ellington (2)
Enfield (2)
Essex (2)
Fairfield (6)
Farmington (4)
Glastonbury
Griswold (3)
Meriden (4)
Middlebury (3)
Middlefield (4)
Middletown (9)
Montville
New Britain (23)
New Canaan (2)
New Hartford (4)
New Haven (10)
Newington (3)
New London (5)
Newtown (5)
Norfolk
North Canaan (12)
North Stonington (2)
Norwalk
Norwich (18)
Old Lyme (13)
Orange (2)
Plainfield (4)
Plymouth (2)
Pomfret
Suffield (11)
Thomaston
Thompson
Tolland (3)
Torrington (6)
Trumbull (4)
Vernon
Voluntown
Wallingford (5)
Washington (2)
Waterbury (3)
Waterford (6)
Watertown (9)
Westbrook (2)
Weston (3)
Westport (9)
Winsted
Windham
Wolcott (2)
Woodbury (2)

Analyses were made of water from springs at the following places:

Ansonia (5)
Beacon Falls (2)
Berlin (2)
Bethel
Branford (2)
Bridgeport (4)
Bristol (4)
Brookfield (2)
Brooklyn
Burlington
Canton (2)
Cheshire
Cornwall (2)
Danbury (9)
Derby (4)
East Hampton (3)
East Lyme
Enfield
Essex
Fairfield (11)
Farmington
Glastonbury (2)
Greenwich (3)
Groton (9)
Haddam (3)
Hamden (9)
Hartford
Harwinton (3)
Huntington (7)
Kent (2)
Litchfield (4)
Lyme (2)
Manchester (3)
Mansfield
Marlborough
Meriden (14)
Middlebury (3)
Middletown (6)
Milford (15)
Morris (2)
Naugatuck (2)
New Britain
New Haven (6)
North Haven (12)
Norwalk (3)
Norwich (7)
Old Saybrook
Orange (2)
Oxford
Plainfield (5)
Pomfret
Putnam
Ridgefield (5)
Salisbury (3)
Saybrook (2)
Seymour (4)
Sharon (2)
Southington
South Windsor
Sprague
Stafford (3)
Stamford (5)
Stonington (2)
Suffield (2)
Thompson
Tolland (4)
Torrington (7)
Trumbull
Wallingford (16)
Washington
Waterbury
Waterford (5)
Watertown
Windham (9)
Windsor
Winsted (4)
Woodbridge (3)
Woodstock (5)

Digitized by Google

Inspections of wells and springs were made at the following places and the number of samples collected by the bureau also shown:

Ansonia (9)
Bristol
Central Village
Colchester (7)
Collinsville
Derby
East Haddam (4)
East Hartford (2)
Groton
Hamden (3)
Higganum
Lyme
Madison (3)
Meriden
Milford (2)
New Canaan
Newington (4)
New London (2)
North Canaan (2)
North Haven
North Windham
Norwich (8)
Oxford
South Norwalk
Suffield (9)
Taftville
Terryville
Tracy
Union
Washington (2)
Waterford
Willimantic

INTERSTATE CARRIER SERVICE

In connection with the work of certifying to the safety of all water supplies used by Interstate Carriers, the assistance of the United States Public Health Service was requested and Mr. Sol Pincus, Associate Sanitary Engineer and Mr. E. C. Sullivan, Jr., Assistant Sanitary Engineer were assigned to co-operate with the Bureau in making sanitary surveys. Their assistance has been most helpful and their conferences with the officials of the different companies supplemented by our own efforts were instrumental in obtaining most of the changes and improvements recommended in the detailed reports which were furnished to each company.

The attitude of the officials of the different companies was most agreeable and they seemed very anxious to do everything within reason to make their supplies safe and maintain them so.

Inspections and in some cases reinspections were made of the water supplies at the following places by the United States Public Health Service in co-operation with this Bureau:

Ansonia
Beacon Falls
Bridgeport
Bristol
Canaan
Danbury
Derby
Forestville
Groton
Hartford
Litchfield
Meriden
Middletown
New Britain
New Hartford
New Haven
New London
Norwich
Putnam
Ridgefield
Rockville
Saybrook Junc.
Seymour
Shelton
Stamford
Suffield
Terryville
Torrington
Waterbury
Watertown
Willimantic
Winsted

Digitized by Google

Certifications for water supplies used by interstate carriers for culinary and drinking purposes were issued for the following places in 1921:

Bridgeport	Middletown	Ridgefield
Danbury	New Britain	Stamford
Hartford	New Hartford	Waterbury
Litchfield	New Haven	Winsted
Meriden	New London	
	Putnam	

ICE POND INVESTIGATIONS

The attention of the Bureau has been called to several cases of insanitary conditions in the vicinity of ice ponds. These were investigated and recommendations made looking toward the elimination of pollution or confining the sale of the ice for refrigerating purposes only. A summary of these investigations is given below.

Hamden

At the request of the local Health Officer, inspection was made May 22, 1922 of the Flight Ice Pond on Brook Street. About 1,200 tons of ice were harvested from the pond during the past season and sold to a milk dealer for cooling milk. Inspection of the watershed revealed several sources of contamination from household wastes and sewage and the householders were instructed in necessary measures to prevent contamination of the brook. In the absence of analyses indicating the quality of the ice, it is recommended that the practice of selling the ice for cooling purposes only be continued.

Middletown

At the request of A. Brazos and Sons, Inc., a detailed survey was made Nov. 15 and 16, 1921 of the immediate vicinity of the Pameachea Ice Pond. The pond, located directly south of the city limits of Middletown, is about half a mile long, 400 ft. wide and 10 ft. deep. With the exception of Durham Ave., the neighboring streets are practically dirt roads. The sanitary conditions around the pond were generally poor. There are 86 houses in the immediate vicinity, about 90% having ground privies, usually in poor condition, affording considerable opportunity for washing excreta into the pond during rains. Sink drainage could also find its way into the pond. Chickens are kept by most

Digitized by Google

of the tenants, and occasionally other live stock. The usual method of garbage disposal is by feeding to stock. The water is further polluted by the chemical wastes from an acetylene works. Analysis of samples of the water taken at the time of inspection showed very high bacterial content and innumerable anabaena, a microorganism which imparts objectionable taste and odor to the water. Under existing conditions, ice harvested from the pond is suitable only for refrigerating purposes. A very detailed report was forwarded to the ice company embodying recommendations for the abatement of nuisances. The company was also advised of the proper legal steps necessary to put these recommendations into effect.

Milford

October 27, 1920, inspection was made of Ambrisco Ice Pond in company with the Health Officer. Conditions about the pond were generally satisfactory and there was, apparently, no objection to harvesting ice from it.

Mystic

At the request of the Health Officer of Groton, the ice pond of Ernest W. Brown was reinspected June 8, 1922. No action had been taken to eliminate pollution from a livery stable and outside toilets near the pond. It was recommended that the Town Health Officer prohibit the sale of ice for other than refrigerating purposes.

New Britain

At the request of the local health officer, inspection was made Sept. 21, 1921 of the proposed location for an ice pond to be used by John Giragosian. The pond is located on the old road to Hartford about 3 miles northeast of New Britain. Several sources of serious pollution were found adjacent to the pond, which the owner promised to remove. Upon analysis the water at that time was found to be grossly polluted. A reinspection in March 1922 showed that the sources of pollution were not removed as promised and the health officer was therefore advised to prohibit the sale of the ice for other than refrigerating purposes, until the sources of pollution are removed.

Digitized by Google

Putnam

Prentice Ice Pond was investigated and no pollution found which would be a serious objection to harvesting the ice from it.

SWIMMING POOLS

Owing to the enforced curtailment of field work, but few swimming pools were inspected during the past two years. This is to be regretted as inspections made in previous years show that while some of the pools are well constructed and operated, there is considerable room for improvement in many others, particularly in control of the disinfection of recirculated water. The Bureau, however, has been able to make all inspections requested and will attempt to continue this policy in the future. Inspections made during the past two years are as follows:

Bridgeport
Bristol
Canaan
Greenwich
Hartford
Litchfield
Manchester
Middletown
New Britain (3)
New London
New Haven
Norwalk
Norwich
Stamford
Torrington
Waterbury (2)
Winsted

New Britain

At the request of the local Health Officer, inspection was made of the Y. M. C. A. swimming pool on February 10, 1922. The pool, shower baths and locker rooms were found to be well constructed and in satisfactory condition at the date of inspection. Operation of the pool is on the fill and draw basis although quite a large amount of heated water is recirculated through the tank to maintain an average temperature of about 72° Fahrenheit. Water is pumped from a deep artesian well, properly constructed, either directly to the pool when filling or to the heating furnaces. The pool is completely drained and refilled once every two weeks. Recirculated water, after heating, is disinfected with about one gallon of "Chlorofectant" per week.

"Chlorofectant" is a solution containing free chlorine. Upon analysis, the bacterial content of the water was found to be rather high and it was recommended that the dose of disinfectant be increased to 3 gallons per week. Better

Digitized by Google

results, however, would be secured by using the standard chlorinating apparatus. Sanitary regulations for bathers are posted in conspicuous places. No bathing suits are permitted. Towels are furnished and are laundered and sterilized at a local laundry after each usage.

New Britain

At the request of the local Health Officer, Inspection was made of the Y. W. C. A. swimming pool on February 10, 1922. The pool was found to be well constructed and in excellent condition at the date of inspection. Showers and dressing stalls also were properly constructed and maintained. Regulations governing the use of the pool were posted in conspicuous places. Individual bathing suits and towels are provided for each bather and laundered and sterilized by a local laundry after each usage.

City water is used in the pool and constant recirculation maintained during bathing hours, the recirculated water being filtered through mechanical filters, heated to proper temperature and sterilized with liquid chlorine. Analysis of the pool water showed it to be of suitable quality for bathing purposes. It was evident that the management made every effort to operate and maintain the pool in proper sanitary manner.

SEWAGE

The State Department of Health is required to investigate all points of sewage discharges and may examine all existing or proposed public sewerage systems and refuse disposal plants, and may compel their operation in a manner which shall protect the public health. The law does not specifically require the filing of plans for other than proposed new works, but it has been the endeavor of the Bureau to secure for the files of this office maps and plans of existing sewerage systems and sewage disposal works. Our success along this line has been somewhat greater than with water supplies. there being on file at the present time 544 maps and plans relating to sewerage, covering 27 of the 59 communities containing sewerage systems and a considerable number of private systems.

Digitized by Google

A list of the sewerage systems, of which 24 treat their sewage, is submitted:

Ansonia
Baltic
Bridgeport
Bristol
Canaan
Canton
Collinsville
Danbury
Danielson
Derby
East Hartford
Farmington
Glasgo
Granby
Greenwich
Groton Long Pt.
Hartford
Jewett City
Kent
Lakeville
Litchfield
Manchester
Meriden
Middletown
Naugatuck
New Britain
New Canaan
New Haven
New London
New Milford
Norfolk
North Canaan
Norwalk
Norwich
Plainville
Portland
Putnam
Ridgefield
Rockville
Sharon
Shelton
Simsbury
Southington
So. Manchester
Stafford Springs
Stamford
Stonington
Stratford
Thomaston
Thompsonville
Torrington
Wallingford
Waterbury
West Hartford
West Haven
Westport
Willimantic
Windsor
Windsor Locks

Sewage Treatment
As of June 30, 1922.

Septic Tank
Manchester
Canaan

Imhoff Tank
Middletown

Fine Screens
Bridgeport (Started operation in 1921)

Imhoff Tank & Chlorination

Greenwich
Prospect Beach
(West Haven)
Stamford
(Started operation in 1921).
Stratford
(Started operation in 1921).
West Haven

Sand Filters

Bristol
Danbury
Danielson
Granby
Litchfield
Meriden
Norfolk
Ridgefield
Simsbury
So. Manchester
(Not Operating)

Fine Screens and Sand Filters

New Britain (Fine screens started operation in 1921.)

Digitized by Google

Septic Tank & Contact Beds
Rockville (Contact Beds abandoned)

Septic Tank & Sand Filters
Southington

Imhoff Tank & Sand Filters
Lakeville

Septc Tank, Sand Filters & Chlorination
New Canaan (Only excess storm flow chlorinated. Leaping weir, large lagoon, and chlorinator installed 1921).

APPROVALS OF SEWERAGE SYSTEMS AND DISPOSAL WORKS

Branford

October 30, 1920, application received for approval of plans for septic tank with tile subsurface disposal at the Owenego Inn, Indian Neck. Approval granted November 30, 1920.

Branford

Upon authorized application of the Engineer for the Board of Education, Town of Branford, the plans for the disposal of sewage from the Harrison Avenue School were approved December 6, 1921, after two field inspections had been made. The plant will take care of the wastes from about 700 pupils and cellar drainage from the three grouped school buildings. The sewage disposal system was planned to consist of a septic tank and underdrained tile fields, the effluent to be discharged into a catch basin and carried 600 feet to Rose's Brook. The plant, as designed, was installed in the Fall of 1921 and has operated in a very satisfactory manner.

Clinton

June 21, 1920, application received for approval of plans for septic tank on the Houpert property near the reservoir of the Guilford-Chester Water Co. Approval was granted July 20, 1920, but in August we were advised by the Health Officer that the tank had never been built.

Digitized by Google

Danbury

November 22, 1920, application received for approval of plans for sewage disposal at Westgate Farm. It was recommended that the capacity of the tank be increased, that the subsoil system be constructed in two independent units, and the works supervised to insure satisfactory operation. With this understanding, approval was granted November 30, 1920.

Fairfield

Application was received from the Porcupine Company, July 29, 1921, to install a septic tank for the sewage of their 100 employees and discharge the effluent into Turney's Creek. Approval was granted August 13, 1921.

Groton

November 29, 1918, application received for approval of plans for a sewerage system and septic tank for the Groton Ship and Iron Works and the housing development in connection therewith. This plant was built by the U. S. Shipping Board Emergency Fleet Corporation and the Borough of Groton jointly. Due to the war necessities, the plant was built before final plans were filed with this Bureau and formal approval being withheld until this requirement was complied with. Approval was not granted until July 20, 1920.

Groton

Upon information that the Max Pollack Silk Mills near Groton would be completed and put into operation during the Fall of 1921 and were likely to discharge industrial wastes and sewage detrimental to nearby fisheries, investigation was made by the Bureau. It was found that the silk mills would be engaged primarily in spooling silk using only dry processes and producing no industrial wastes. At a future date the Company contemplated building a plant for the dyeing of silk. Depending upon operation the present plant would employ from 100 to 400 hands. Upon calling the attention of the factory officials to the necessity of treating the domestic sewage from the factory, the President of the Company retained a consulting engineer to

Digitized by Google

design and supervise construction of a plant meeting the approval of the State Department of Health. A plant consisting of a syphon chamber and sand filter was installed and put into operation in November 1921. Upon inspection, October 23, 1921, before regular operation had begun, the plant was found to be in good condition except for the distributing launders over the sand beds, which permitted considerable scouring of the sand. This, the consulting engineer promised to remedy. A report from the consulting engineer in April 1922 indicated that the plant had operated in a very satisfactory manner throughout the winter. A reinspection June 5, 1922 showed the plant to be in excellent condition and producing an inoffensive effluent. Application for the approval of plans was granted June 20, 1922.

The factory officials were advised that when the dye house would be completed, proper treatment of the wastes would be required and they promised to keep the Bureau informed as to developments along this line.

Mansfield

Application was received September 26, 1921, from the Mansfield State Training School and Hospital for the construction of a sewage disposal plant consisting of septic tanks and sand filters, the effluent to discharge into the Willimantic River. Approval was granted April 29, 1922.

New Britain

As a result of the experimental work at the New Britain sewage testing station, the city has put into effect the first step to accomplish more effective treatment of the sanitary sewage by installing a fine screening plant of 10 million gallons per day capacity. Plans and formal application for approval were received by the Department November 30, 1921, and after review the Bureau recommended approval of same, which was granted by the Department June 20, 1922. The plant was completed and put into operation in February 1922.

The plant consists of a screen chamber equipped with two Dorrco drum screens, a screening pit adjacent to the screen chamber, a bucket elevator to remove and drain the screenings and an underdrained screening bin for temporary storage and further dewatering of the screenings. The screens and elevator are operated by a motor, geared down to give required speeds.

Digitized by Google

In operation the sewage passes from outside to inside of the screens, thence through a vertical circular spout into the effluent channel. The screenings automatically pass into the screening pit, are lifted and drained by the bucket elevator, discharged and further dewatered in the storage bin, loaded in carts and piled on spoil land at the sewer beds. The screened effluent is applied to the sand beds. With regard to solid matter a self cleansing action is maintained by the screen without the use of brushes or other mechanical or manual devices except the rotation of the screen. Occasionally, however, there is a sufficiently heavy accumulation of grease to partially clog one screen. This is remedied by cleaning with kerosene and a wire brush. A feature of the installation is that there is no running water at the plant, an unfavorable operating condition, not encountered at other large screening plants.

As judged by data obtained at the experimental plant, the screens, which have slots 1-16 inch by ½ inch, should remove 20% suspended solids and 30% settleable solids. About 30 cubic feet of screenings, per million gallons, moisture 81% were obtained from the experimental unit treating the entire sewage flow for one week. The wet screenings are apparently suitable for fertilizer, when spread over the ground in a thin layer and plowed under.

New Britain

In order to pass upon the application of the Hart and Cooley Company for approval of the wastes disposal plant, inspection was made April 26, 1922. The domestic sewage is pumped into New Britain sewers and acid iron wastes discharged into a ditch which discharges into a creek leading to Corbin's Pond, about a mile and a half below the plant. Acid wastes are from the wash room and pickle tubs. The wash room wastes are caught in a small earth basin and either completely or partially neutralized by putting cakes of soda ash into it. The pickle tub wastes are caught in two outdoor wooden tanks, each 4 feet wide, 15 feet long and 3 feet deep, in which cakes of soda ash are placed for neutralization. The treated wastes flow into the ditch, the total flow of which is passed through an upward flow pea marble filter to neutralize the acidity, if any, still in the wastes after treatment with soda ash. The filter effluent is tested with litmus papers. Considerable limestone and marble were placed in the ditch below the filter. At the time of inspection, the filter was being by-

Digitized by Google

passed due to a washout from a recent freshet. The inspector was assured that this condition would be remedied very shortly. The ditch above the filter required cleaning, but below the filter was in excellent condition and the water perfectly clear. Owing to the fact that the method of neutralization, while effective, does not really utilize a definitely constructed and operated treatment plant, the application was disapproved but the Company advised to continue to neutralize their acid wastes. The Company has maintained a praiseworthy attitude in this respect in the past and no doubt the wastes will continue to be effectively neutralized before leaving their property.

Norwich

Application was received April 14, 1921, from Joseph L. Hubbard for the construction of a residential sewage disposal plant at Norwichtown, consisting of a septic tank and sub-soil drainage tile lines. Approval was granted April 29, 1922.

Plainville

April 4, 1921, application received for approval of plans for addition to the sewage disposal plant of the Plainville Realty Co. Approval granted April 26, 1921.

Redding Ridge

September 27, 1920, application received for approval of plans for sewage disposal works on Percy Litchfield property located on watershed of the Bridgeport Hydraulic Co. Approval granted October 16, 1920.

Stafford Springs

Application was received June 9, 1922 from the Borough of Stafford Springs for the construction of sanitary sewers on West Street, West Main Street and Monson Road, the sewage to be treated in a septic tank near the corner of West and Green Streets, and the effluent discharged into the headrace of the Rhode Island Worsted Company's mills, thence into the West Branch of the Willimantic River. Inspection of the sewer district and disposal site had been made June 1, 1922. Approval was granted June 20, 1922.

Digitized by Google

Wallingford

Application for the construction of a sewage disposal system was received from the Gaylord Farm Sanitarium July 7, 1921. A set of plans was filed with the Bureau at the same time. The treatment called for was sedimentation in Imhoff tanks, followed by sterilization with hypochlorite of lime, the effluent to be discharged into ditches on a sandy hillside and seep into the soil. Approval was granted August 16, 1921. The plant was constructed as designed and found to operate in a very satisfactory manner.

Washington

March 3, 1921, application received for approval of plans for the enlargement and modification of the sewage treatment plant at the Wykeham Rise School. Approval granted May 10, 1921.

West Hartford

August 12, 1920, application received for approval of plans for sewage disposal on property of the Hartford Tube Products Co. Approval granted September 10, 1920.

West Hartford

Application was received June 2, 1921 from the Jewell Belting Company for the construction of a plant to treat the tannery wastes and domestic sewage from their factory at West Hartford. The wastes are first passed through a Dorrco drum screen with 1/8 inch round perforations, then settled in a Dorr thickener, the effluent passing into a lagoon to provide sedimentation if precipitation takes place beyond the thickener. The sewage then passes to a siphon chamber, from which it is applied to sand filters. The filter effluent discharges into Park River. Approval was granted July 28, 1921.

Wethersfield

Upon request of the Consulting Engineer, an inspection was made on September 2, 1921, of the town of Wethersfield, covering the streets in which it is proposed to lay sanitary sewers and also the site of a septic tank treatment plant. On March 13, 1922, the Board of Sewer Commis-

Digitized by Google

sioners of Wethersfield voted to accept the plans and specifications of their consulting engineers for the sewerage system and treatment plant and on that date submitted formal application for approval of same by this Department. A complete set of plans and specifications was also placed on file with the Bureau. Upon review of same the Bureau recommended approval of the application provided that the sewers are laid to exclude storm water and keep ground water infiltration down to a minimum; that removal and disposal of sludge should be such as to avoid nuisance and that the effluent from the septic tank be discharged into the Connecticut River so as to obtain proper dispersion. Approval on the above basis was granted June 19, 1922.

The sewerage system and disposal plant will serve about 400 houses, but for the present only half of these will be connected with the system. The system is designed on the separate plan and will consist of about 8 miles of lateral sewers discharging through an outfall sewer 2.8 miles long into the Connecticut River at a point about 900 feet south of Press Barn Range. Before discharging into the river the sewage will be passed through a septic tank with a capacity to retain the flow for about 8 hours when the tank is free from sludge. Allowing half the capacity of the tank for sludge storage, the retention period would be 4 hours. This is about the minimum that would be permitted but the flow of the river at this point gives so great a dilution that there probably will be no objection due to improper sedimentation.

During periods of flood flows the tank and a large part of the outfall sewer will be completely submerged. During such periods, the sludge, which it is proposed to pump onto land near the septic tank and allowed to dry there would be washed into the river. It is quite likely that the sludge will have been pretty well dried and will not constitute a nuisance. If nuisance occurs, however, some other method of sludge disposal will have to be employed.

The contract for construction of the system and treatment plant was let in March 1922, and construction is now (June 30, 1922) under way.

Wethersfield

Application and plans for a sewage system and disposal plant were received April 27, 1922 from Thomas McNierney for a contemplated real estate development. Inspec-

Digitized by Google

tion of the property was made. As it is not known whether the property will be developed or not, formal approval is pending.

MUNICIPAL SEWAGE DISPOSAL PLANTS

Considering that municipalities are bodies with power to enact laws for the protection and welfare of their citizens, it is natural to expect experience would dictate that no act be permitted which would adversely affect other municipalities or the general public. Unfortunately a number of municipalities are not endowed with so broad a vision and in this State we find that many communities are forced to tolerate nuisance, and in some cases actual health menace, from the indiscriminate discharge of its own sewage or that of other communities into the waters of the State. Aside from the ever persistent disagreeable evidences of such pollution, affecting even public water supplies and many ice ponds in addition to nuisances from odor and unsightliness, the problem is of considerable importance as affecting our natural recreational facilities and the fishing industry. As to the latter, we know that a serious situation exists due to the gradual depletion of clean water fish in our streams and the pollution or killing of shellfish.

It is universally admitted that one of the greatest aids to health is outdoor recreation. Although Connecticut abounds in natural facilities for such recreation, it is doubted if the general public appreciates the fact that the State is really a vast playground in addition to being one of the most important manufacturing States in the Union. Its woods, streams, lakes and shores are so alluring in their appeal that they attract thousands of residents of neighboring States in addition to a considerable portion of the population of this State. With the continued building of good roads and increase in number of motor vehicles, we must look for increased patronage of our natural recreation facilities. In the interest of public health, these facilities should be conserved, particularly against their powerful enemies, Sewage and Industrial Wastes pollution.

With the present powers of the State Department of Health, the installation of sewage and wastes treatment plants has been a very slow, and it must be confessed a difficult undertaking. It is a source of gratification, however, to report that progress has been made and that the past few years have witnessed a distinct increase in the number of treatment plants installed, municipal as well as

Digitized by Google

private. Toward the end of obtaining the maximum benefit from these plants, the Bureau has made detailed inspection and in some cases tests of a number of municipal plants with the view to offering constructive recommendations to obtain or assure proper operation. This work while of recognized importance, has been necessarily limited by insufficient personnel and appropriation at the command of the Bureau. It is hoped that future work of this nature can be undertaken on a much larger scale. A brief summary of the investigations made during the past year is given below.

Bridgeport

On the initiative of the Bureau, inspection was made March 20, 1922 of the Bridgeport sewage disposal plant. The sewage is passed through a Reinch-Worl screen, perforations 1-32 inch wide, collected in storage pits and pumped into Long Island Sound at the shore line near the plant. A complete set of plans are on file with the Bureau. At the time of inspection screenings were collected in a hopper and pumped directly onto the sandy ground adjacent to the plant. This arrangement, however, was only temporary. The plant was functioning properly at the time of inspection, but it was reported that the 1-32 inch slots were not entirely satisfactory and would be replaced by 1-16 inch slots. At present only a small percentage of the sewage ultimately to be treated reaches the plant. As fast as funds are available the remaining sewers will be connected up. When this is done it is intended to complete the original plan of extending the outfall about a mile offshore and chlorinating the screened effluent.

Canaan

At the request of the local Health Officer, inspection was made of the Canaan septic tank on October 20, 1921. The tank was found to be practically full of solids and naturally a properly clarified effluent could not be expected. Sludge had not been properly removed from the tank for several years. The tank should be cleaned at least once a year and beds should be provided for drying the sludge.

Lakeville

At the request of the town officials, the Lakeville sewage disposal plant was inspected by the Bureau on October 20,

Digitized by Google

1921 and found to be functioning properly and producing a clear, waterwhite, odorless effluent. The plant consists of a bar grid, Imhoff tanks, dosing chambers, sand filters and sludge drying beds. The effluent is discharged into a small brook passing through a rather swampy area. During warm weather it is possible that due to stagnation, odor and mosquito nuisance may occur in the swamp. The remedy for such conditions will be to provide a proper effluent channel so constructed as to prevent overflow onto the swampy ground.

Manchester

At the request of an interested citizen, a proposed sewer district was inspected March 23, 1922, including a number of well built up streets. The district was found to be badly in need of sewers, as the present disposal by privies and cesspools was productive of general insanitary conditions and nuisances. The sewer project was approved by a meeting of authorized voters on the evening of March 23, 1922, at which the Bureau was represented, and the Treasurer of the Eighth School and Utilities District was authorized to borrow $18,000 and proceed with the construction of the sewers in accordance with the plans of their consulting engineer.

Meriden

On the initiative of the Bureau, inspection was made of the Meriden sewage disposal beds May 11, 1922. In general the plant was in excellent condition, although replacement of surface sand was required for some of the filters. There were no flies or odors at or near the beds. The plant consists of 14 sand filters, total area 16 acres, used in rotation two per day. In addition there are two overflow beds, each 2.1 acres area to take care of excess infiltration during rains. There is no preliminary treatment. The beds are in a deep bank of natural sand, into which the sewage seeps. A few of the beds were underdrained, but these drains have been abandoned, being apparently unnecessary on account of the extraordinary character of the soil. After each dosing, the beds are allowed to drain, the deposits raked off, some being carted to spoil land and some used for fertilizer, with apparently good results. The beds are then harrowed and finally evened up with a chain drag. At the time of inspection all the beds were dry except those

Digitized by Google

receiving sewage. Records of labor and flows are kept on a scratch tablet.

It is suggested that printed forms be used and also an accurate flow recorder be installed so that reliable data can be secured on filtration rates. Such data would be extremely useful and probably result in considerable saving in determining the necessity and extent of future additions.

Middletown

On the initiative of the Bureau, inspection was made April 27, 1922 of the municipal sewage disposal plants, one at the foot of Washington Street, the other at the foot of Catherine Street. Treatment at each plant is by sedimentation in Imhoff tanks, the Washington Street plant serving somewhat less than 1,000 persons, the Catherine Street plant about 50. In the past difficulties have been experienced in drawing sludge from the Washington Street plant and complaints were received from odor from the Catherine Street plant. In order to promote proper functioning of the plants a detailed report was submitted to the Director of Public Works embodying a comprehensive review of design and proper method of operating the tanks. By the end of June, 1922, the Washington Street plant was in satisfactory condition but sludge beds had not been prepared and pipe line repairs not made at the Catherine Street plant. The Bureau was informed however, that this work would be done in the near future.

Southington

At the request of the town officials, the sewerage system and disposal plant were inspected on February 7, 1922 and reinspected February 20, 1922 and June 2, 1922 with the object of determining the cause of obnoxious odors from the sand filters and suggesting methods of eliminating them. Considerable data furnished by the town engineer was studied in detail.

The odors were caused primarily by excessive dosage of the sand filters, other contributing causes being poor drainage of the filtration site, excessive volume of sewage from ground water infiltration and poor operation of the septic tanks and coke filters. Without accurate measurement of the volume of sewage, final recommendations are not possible. It was therefore suggested that the town install proper apparatus for obtaining continuous and accurate

Digitized by Google

measurements of the sewage flow and that such steps be taken as were reasonable in cost to provide better drainage at the filtration site and also reduce the amount of infiltration into the sewerage system. In order to secure better clarification of the sewage prior to dosing on the sand beds it was suggested that the septic tanks be cleaned when half full of sludge and the coke be removed from the roughing filters in order to provide additional settling tank capacity. These suggestions were carried out and also in order to lessen the load on the filters, the dilute night sewage was bypassed into the Quinnipiac River. These measures improved conditions temporarily but as long as the sand filters are operated at a rate in excess of 200,000 gallons per acre per day good results cannot be expected. In the final analysis sufficient area should be added to the sand filters so that for the normal dry weather flow, the rate of filtration will not exceed 175,000 gallons per acre per day.

Stamford

At the request of the City Engineer, inspection was made of the Stamford sewage disposal plant, Mr. Donaldson, of the Fuller, McClintock Co., engineers, New York City, being present. The treatment consists of sedimentation in Imhoff tanks followed by chlorination. A complete set of plans of the plant are on file with the Bureau. During the inspection, two tanks were used in series to take care of the grease and the remaining tanks used in parallel. Shortly after starting operation, foaming took place in the tanks and at the time of inspection a very considerable amount of gas was being liberated from one of the gas vents, which appeared about ready to "boil". The first sludge drawn from the tank was apparently not well digested and did not dry readily on the sludge beds. Sludge drawn at a later date was found to be characteristic Imhoff tank sludge and dried readily. Careful attention is given to operation and detailed records kept. Tests for settleable solids and bacteria are made regularly to determine the efficiency of treatment.

The volume of sewage varies from 2.5 to 5 million gallons per day the larger flow being tentatively attributed to infiltration of tidal water which covers the flats crossed by the main outfall sewer. The average flow from November, 1921 to February, 1922 (inclusive), was about 3,250,000 gallons per day. Chlorine dosage is about 10 lbs. per million gallons or 1.2 parts per million. This amount is quite small for sewage disinfection but from the reported tests,

Digitized by Google

removes about 92% of the total bacteria. About 93% of the settleable solids are removed by the Imhoff tanks.

Stratford

On the initiative of the Bureau the Stratford Sewage Disposal Plant was inspected March 20, 1922, and reinspected March 22, 1922. The plant was completed and put into operation in October 1921. The sewage is settled in Imhoff tanks, chlorinated and retained in a tidal basin to discharge into Long Island Sound automatically on the ebb tide. Sludge beds are provided and a full time operator is employed. The plant was in good condition during both inspections except for a settlement failure of a sludge channel to the drying beds.

Chance samples taken March 22, 1922 showed satisfactory removal of suspended and organic matter by the Imhoff tanks but the chlorine dosage of about 20 lbs. per million gallons was too low to accomplish proper sterilization. Increase of the dosage to about 60 lbs. per million gallons was recommended, which could be gradually cut down, depending upon analytical results.

West Haven (Prospect Beach)

On the initiative of the Bureau, inspections were made May 3, and 9, 1922 of the Prospect Beach sewage disposal plant. Treatment at the plant consists of sedimentation in septic tanks followed by chlorination, the effluent being discharged into Long Island Sound below the low water mark. Coke filters are also installed but these are not used. No sludge beds are installed but it is quite likely that the coke filters can be remodelled and used for this purpose. The plant appeared in excellent condition at the time of inspection. The septic tanks were producing a well clarified effluent and analyses of samples indicated that the sewage was being efficiently sterilized by the chlorine treatment. Bacteriological analyses of the water in Long Island Sound in the vicinity of the sewer outlet showed very low content of total bacteria and B. Coli. The high efficiency of this plant is attributed to proper design and intelligent supervision of operation.

West Haven

On the initiative of the Bureau, inspection was made May 3 and a performance test run May 8 and 9, 1922 of the

Digitized by Google

West Haven sewage disposal plant, many complaints from odor having been received in the past. Treatment consists of sedimentation in Imhoff tanks, followed by chlorination, the effluent being discharged into Long Island Sound below the low water mark. Six Imhoff tanks are provided, four for the high level district, two for the low. The effluent from the high level tanks passes directly into a chlorinating chamber and thence to the outfall sewer. The effluent from the low service tanks is chlorinated, retained in a tidal basin and discharged on the ebb tide into the outfall sewer. One very small sludge bed is provided.

Due to construction details it is impossible to operate the plant properly, particularly when drawing off the sludge. The chlorinators were found to be in poor condition. With proper withdrawal of the sludge it is believed that most, if not all of the odor nuisance can be eliminated. A careful series of measurements has shown conclusively that the tidal basin is unnecessary. The first step to remedy conditions would be to discontinue the tidal basin, fill it in and convert it into sludge drying beds. Repairs were started on the chlorinators shortly after the performance test. Indications from the test were that a well clarified and sterilized effluent could be produced at the plant. Several changes in method of operation were suggested to the Town Engineer and were adopted.

STREAM POLLUTION BY INDUSTRIAL WASTES

Although the General Assembly of 1920-1921 abolished the Industrial Wastes Commission, which was co-operating with the State Department of Health, the Bureau of Sanitary Engineering has been called upon to make several investigations of stream pollution during the past year. The former experience of the Bureau was again repeated as in almost every case the manufacturers were willing to co-operate with the Bureau by adopting reasonable measures to abate pollution. As a result, several treatment plants have been constructed and plans are now being prepared for the construction of others. With proper authority vested in the Department by Legislative Acts and facilities for experimental purposes, there is no doubt but that considerable pollution due to industrial waste could be quite rapidly eliminated without injury to manufacturing or other interests. At present, however, the power of the State Department of Health is entirely inadequate to deal with pollution existing prior to May 1, 1917.

Digitized by Google

This Bureau takes the attitude that the elimination of such pollution being of great benefit to the entire State, the activity of any authorized State agency should go beyond the mere issuing of orders to abate pollution. Extended experience here as elsewhere, indicates unmistakably that proper treatment can be prescribed only after careful study and, in some cases, experiment at each individual mill and comparison of results with similar investigations. It is true that we have knowledge of almost innumerable systems for sewage and industrial wastes treatment but to attempt to apply any one method without a full knowledge of the conditions at each place would only postpone the solution of the whole problem. While it is true that the burden of proper study and investigation can be assumed by the individual manufacturers we must not forget that present objectionable conditions are the result of lack of proper legislative regulation. It would, therefore, be manifestly unfair to require the manufacturers to assume all the cost of investigation. Further, the statutes now require that all plans for sewage disposal systems be approved by the State Department of Health and without adequate investigation of each problem it is impossible for the Department to adequately pass on these plans. Therefore, three distinct phases are involved in the problem. First: what to do; second, how to do it; third, do it. The first phase means study to determine the character of treatment effluent required to avoid offense. The second phase means first hand determination of the method of treatment required to produce this effluent. The first and second biennial report of the Industrial Wastes Commission, 1918-1921, cover these two phases for a number of important specific situations. While forms of treatment are indicated for wastes of various derivation and composition the work was necessarily more of a general nature and individual investigations at a great number of mills to inform each mill owner just what form of treatment plant should be installed could not be undertaken. To a very large extent it is believed that the State should provide facilities to furnish this information where requested. The third phase, the actual construction and operation of treatment plants, should be in the hands of manufacturers and their engineers after plans have been properly approved. The State, however, should provide for an inspection system to see that the plants operate properly and to render assistance where desired. It is believed that any attempt to correct conditions by wholesale issue of orders for abatement without

Digitized by Google

proper study and knowledge by the regulating State authority cannot end other than to the disadvantage of the industries of the State, and the general public as well.

A brief summary of the investigations made during the year follows.

Bethel

Investigation of the pollution of Willow Brook by this Bureau was prompted by a protest, carrying 156 signatures, against disagreeable and unpleasant odors arising from the brook. The inspection was made July 29 and August 1, 1921 and samples of water from the brook secured for chemical and bacteriological analyses. Reinspection was made December 2, 1921. The brook water was found to be discolored and more or less odorous and the bed of the brook contained considerable odorous black sludge deposits. Although domestic sewage is contributed by about half a dozen houses and three factories, the bulk of the pollution is due to the industrial wastes from the Shepard Tannery. This was conclusively proven not only by the inspections, but also by the chemical and bacteriological analyses of samples of the brook water. Inasmuch as the wastes had been discharging into the stream prior to May 1, 1917 and no definite evidence was obtained that it was a menace to the public health, the Department was unable to take action under Section 2555 General Statutes of Connecticut, Revision of 1918, this statute being the one most nearly applicable to the above case. Mr. Shepard was advised that the community in general would benefit greatly if he would install a proper treatment plant, but this he refused to do. The only remedy would be the enactment of such local ordinances controlling the discharge of wastes into the brook so as to prevent nuisance as will not conflict with the state law.

East Litchfield

Investigation was made of pollution of trout stream on the Iffland property in East Litchfield by pomice from a cider mill. The owner agreed to discontinue the practice of throwing the pomice into the stream.

Digitized by Google

Fabian

Upon request of Health Officer, inspection was made of the pollution of the Quinebaug River at Fabian by wastes from the Woolen Factory. The investigation showed that conditions were as good and, if anything, a little better than the general average of such plants operating in the State, and the Health Officer was advised to consult with the Superintendent who expressed a desire to do anything reasonable to satisfy the complainants.

Groton

Pollution of a brook by wastes from Allen's Laundry was investigated and the owner supplied with a design for a tank, the effluent from which could be led into a stone drain leading to the brook.

Litchfield

Upon complaint from a summer resident of Litchfield, inspection was made on August 23, 1920 of a brook receiving the wastes from the Sunshine Laundry. The brook and laundry were reinspected on March 25, 1921. Outside of very slight discoloration of the water, no nuisance was observed due to the laundry wastes and as conditions did not apparently endanger the public health, the matter was not within the jurisdiction of this Department. The summer resident, however, continued his complaints to the State as well as local authorities and finally appealed to the Governor who referred the complaint back to this Department. The local officials in the meantime had caused the arrest of the laundry owners upon the grounds of maintaining a nuisance and the case went to trial December 21, 1921. It developed that the complaint of the summer resident was independent of public health, it being claimed that when the water was soapy it was unfit for drinking purposes by the two thoroughbred Kentucky horses owned by him and pastured in land through which the brook flowed and that it would also mar the appearance of a fish pool in a garden which complainant contemplated building on his property. During a recess in the proceedings, a conference between the interested parties and a representative of the Bureau resulted in an amicable settlement whereby it was agreed to nolle the case provided the laundry would treat their objectionable wastes to the satisfaction of the local health

Digitized by Google

authorities. A design for a waste treatment plant was later furnished by the Bureau to the laundry owners.

Mystic

At the request of the local Health Officer, inspection was made June 17, 1922 of the premises recently occupied by the Sanitary Laundry. It was found that wastes from the laundry were being discharged and creating nuisance in a ditch flowing through pasture land to the Mystic River. The owner was advised that such pollution was contrary to law and agreed to purify the wastes by passing them through a cinder filter, a design for which was later furnished by the Bureau.

North Ashford

Pollution of stream by wastes from the saw mill of Edward Chamberlain was investigated, and as a result orders were issued to him to discontinue the nuisance.

Plainville

July 20, 1920, inspection was made of sewage disposal plant of the Standard Steel and Bearing Company, Inc., Plainville, Conn.

Ball bearings are manufactured here. The plant employes 1,050, distributed over a 24-hour period. At present, water is purchased from the Plainville Water Company but the factory is developing a supply from a brook nearby. The water from the brook is to be used only for industrial purposes.

Disposal of Wastes

Industrial. There is some pickling and plating done at this plant. All the wash waters from these processes are disposed of by seepage on ground near the plant. Cooling water, drinking fountain and storm water are discharged into the brook direct.

Sanitary Sewage. Only the toilet wastes are conducted to the sewage disposal plant about ¼ mile southeast of the factory and on the east bank of a brook. The sewage plant consists of a septic tank with two compartments, each 24′ x 9′ x 3′ effective depth; each compartment is connected with a dosing chamber 9′ x 9′ x 2′4″ deep; and

Digitized by Google

two filter beds 25′ x 40′ each with 30″ of sand, underdrained by 8″ pipe through center of bed and 6″ laterals spaced 10′ apart. The effluent of the filters is discharged into a brook. The plant was constructed the latter part of 1918.

Operating Data. Apparently no one is detailed to look after the sewage disposal plant. The plant is in a deplorable condition; the manholes in the sewer line are filled with sewage solids which give off offensive odors; the septic tanks appear to contain considerable solids; the filters are badly clogged and the tank effluent permitted to flow into the underdrains through the vent pipes. All of these conditions are due in part or wholly to inexcusable neglect. No sewage plant can operate without supervision and some attention. The plant in its present condition is in such a bad state that rejuvenation may prove costly. It is doubtful whether the filters can be put into shape without digging up the underdrains as they are undoubtedly clogged.

Just how much sewage reaches the plant is difficult to say as only the toilet wastes are discharged into this system. A rough estimate may be placed at 10,000 gallons. This is about four times as much sewage as the filter could possibly take care of satisfactorily.

Analyses and Discussion of Results. The accompanying table details the analyses of the raw sewage and the filter effluents as discharged into the brook. The analyses show both samples to be very high in organic matter and much stronger than ordinary domestic sewage. This may be accounted for by the fact that only toilet wastes are discharged into the sewerage system, whereas ordinary sewage contains in addition culinary and wash waters. The effluent of the filter shows a slight improvement over the raw sewage. This bears out a previous statement that the filters are receiving more sewage than they can properly handle. The effluent was unstable and unfit for discharge into the brook.

Digitized by Google

Conclusions and Recommendations

1. Inspection has shown that the sewage disposal works are not functioning properly due to neglect and overloading the plant.
2. From present indications the filter bed area should be at least doubled.
3. To prevent deposits in the manholes of the sewer line, channels constructed with tile and concrete should be provided.
4. Arrangements should be made to use one filter bed per day, thereby dosing the same bed once every four days.
5. It is suggested that a conference be arranged with officials representing the factory and State Department of Health for the purpose of discussing the suggested changes.

Digitized by Google

CONNECTICUT STATE DEPARTMENT OF HEALTH

Chemical and Bacteriological Examinations at Standard Steel & Bearing, Inc. Sewage Works, Plainville, Conn.

1920 DATE	Nitrogen as					Solids											Bacteria Per c. c.		
						Suspended													
	Organic	Free Amm.	Nitrites	Nitrates	Oxygen Consumed	Total	Volatile	Total	Volatile	Chlorine	Alkalinity	Temp. Degrees C.	Dissolved Oxygen	Per Cent Saturation	Relative Stability	Dissolved Oxygen Demand	Total	B. Coli	Remarks
	RESULTS EXPRESSED IN PARTS PER MILLION																		
May 6	152.00	29.00		.70	142	1060	520	560	390	130	432	15	0.4	4	11		1MM	115M	No. 1114 Raw
May 6	72.00	6.00		.28	114	630	320	40	5	74	316	13	1.6	15	20		50M	9M	No. 1115 Fil. Eff.

"MM" attached to bacterial results means millions.
"M" attached to bacterial results means thousands.

No. 1114 Raw sanitary sewage
No. 1115 Effluent filter beds

Digitized by Google

South Manchester

At the initiative of the Bureau, inspection was made December 8, 1921 of the Travers Process experimental plant conducted by Cheney Brothers for the treatment of the South Manchester sewage. The plant was well built, consisting of an apparatus for dosing the sewage with "marl clay" (which is really a mixture of lime and calcium carbonate) and a patented tank for mixing and then settling the coagulated sewage. A fairly clear effluent was obtained at the time of inspection.

A conference was held April 20, 1922 between the Commissioner of Health and Cheney Brothers Corporation on the present status of the treatment of the sewage, domestic and industrial, from South Manchester. There were present, Commissioner of Health, Dr. John T. Black, Mr. Frank Cheney, Mr. Scott, Chemist, and Mr. Johnson, Engineer, Mr. Jackson and Mr. Doman of this Department, also Mr. Newlands of the Public Health Council.

The problem has two possible solutions, viz.—

1. Treatment irrespective of cost which will give an effluent which can be discharged into the South Branch of the Hockanum River without creating objectionable conditions,

2. Treatment which includes the use of the present disposal plant (if possible) which gives a satisfactory effluent and which will impose the least expense on the owners to install and operate.

Experience had shown that plain sedimentation and chemical precipitation with lime, alum and iron as coagulatants were not satisfactory methods for a sewage of this character. The sludge was of considerable volume and gave no indications of recovery values. Chemical precipitation with marl and ferrous sulphate as coagulants, gave better results than plain sedimentation, or precipitation with lime alum and iron. The volume of sludge was excessive and indicated recovery values very small. Slow sand filtration on adequate sized beds with dosage carefully controlled and beds cleaned and resurfaced regularly appears to be feasible. If sludge contains constituents of such a character and in such amounts as to warrant their recovery, thus decreasing the cost of treatment, then it follows that the method of treatment giving the largest volume of sludge of this character (other things being equal) should be the one selected.

Digitized by Google

No method so far tried gives definite assurance that the recovery values will decrease the cost of treatment any considerable amount. Of all the methods tried the marl, lime, and marl and iron are the least promising in this respect.

Until it has been proven that the separation and treatment of the more concentrated wastes is not practicable, it would not be wise to incur any considerable expense in investigating treating the entire flow of sewage by methods already tried out.

Briefly, the Cheney Company feel that the results which they have obtained with marl and iron as coagulants are better than any of those obtained by previous processes. They are somewhat doubtful as to the economics of the method both in cost of treatment and disposal of the sludge. They are rather adverse to separating and treating the concentrated wastes because of the work it would entail in changing their present system of piping and drainage. They are also reluctant to do very much work in extending the area of the filter beds because of the trouble that they have had with them from clogging. They were advised that in the opinion of the Department the treatment using either marl and iron or lime as coagulants would be very costly and that the disposal of the sludge would be a difficult problem. Nevertheless, they felt that they would like to make some further experiments using these coagulants during the warmer months of the year in order to obtain further data as to what the effect of the treatment would be at that season.

They were advised that the Department had no objection to this and were willing to assist them in any way by advice and would be glad to inspect the installation when they had it in working order.

South Manchester

Bigelow Creek was inspected to determine if it was a suitable supply to use at the public park. The investigation showed that the discharge of the wastes from the mills at Manchester Green so polluted the Creek that it would not be safe to use it.

Digitized by Google

Waterford

On May 18, 1922 investigation was made of a complaint of the pollution of a brook flowing through the property of Chas. Moosbroker, by wastes from a carpet cleaning works, privy and septic tank effluent from the property of S. H. Glorig. A small quantity of soapy wastes and dried lint were found entering the brook from the carpet cleaning works. No pollution was entering from the privy, but some of the septic tank effluent probably reached the brook after passing through low, swampy ground. Considerable surface wash enters the brook also, and these are regarded as the main sources of pollution. Upon analyses the brook water was found unfit for human consumption both above and below the carpet cleaning works and Glorig property and if used for this purpose should be first passed through a sand filter. The brook water would probably not be injurious to cattle.

Watertown

Upon complaint due to obnoxious odors, Steel Brook was inspected November 23, 1921. Due to their convenient location in the town, Steel Brook and its tributaries are extensively used for sewage disposal, receiving the discharges from innumerable sewage drains and the industrial and domestic wastes from two silk dyeing plants. The brook was found to be highly discolored, somewhat odorous and had offensive black sludge deposits on its banks and bottom. Considerable exposed excreta was visible on the banks of the tributaries.

Conditions can be remedied only by installing a town sewerage system and disposal plant, excluding, however, the dye wastes from the silk mills. These should be treated at the mills. Precipitation of the wastes by chemicals followed by sand or cinder filtration should be effective in providing unobjectionable effluents. Upon recommendation of the Bureau, the mills have retained a sanitary engineer who has made experiments with the wastes and is now preparing plans for treatment works.

West Woodstock

Pollution of stream by wastes from saw mill of Allen Marcy was investigated and as a result, orders were issued to him to discontinue the nuisance.

Digitized by Google

SEWAGE DISPOSAL

Special Investigations

Complying with the statutory obligation, advice has been furnished by the Bureau on sewage disposal problems in response to a considerable number of requests. In almost all cases it was necessary for the Bureau to make field inspections. In general, this branch of the work has been very fruitful of results as a fine spirit of co-operation was usually evident between the citizens of the State and local and State Health authorities. Many rural sewage disposal plants were, therefore, installed, thus abating serious nuisances, a number of which were on watersheds, and greatly increasing the comfort of a number of residents by advising as to proper sewage disposal upon the installation of modern plumbing fixtures. To promote a more accurate and widespread knowledge of the subject, a pamphlet has been prepared and is now on the press describing in simple language the various practical methods of sewage treatment for the more usual conditions encountered in rural districts. This pamphlet will be distributed free upon request to the residents of the State. Investigations made during the past two years are given below.

Berlin (Kensington)

July 2, 1920, inspection was made of overflowing cesspools on Baldwin property. The owners very willingly agreed to do everything the Bureau requested to abate the nuisance.

Bloomfield

October 5, 1920, reinspected cesspool nuisance at 14 Darby St. The two new cesspools had been left open and the property holder was ordered to have them filled in.

Branford

In July, 1920, inspected sewage disposal from houses on Main, Meadow, and Roger Sts., and Hobson Ave. This matter has been pending for some time and the only solution seems to be a complete sewerage system for the town.

Digitized by Google

Branford

At the request of the local health officer, inspection was made July 20, 1921 of the property of Mrs. Otell at West Main and Kirkham Sts. The premises were found to be in an insanitary condition due to a garbage dump and neglected privies. The matter was referred to the county health officers with the recommendation that the old privies be removed and new ones with tight vaults and screened from flies be constructed, and the premises maintained in clean condition.

Branford (Double Beach)

Upon complaint of a resident of New Haven inspection was made July 26, 1921 of insanitary conditions of the ladies' privy located on the picnic grounds at Double Beach. The privy was in poor condition and was apparently used at times as a bathing house. The owner promised to make repairs to it and also to the men's privy and keep them in good condition. The local health officer was advised of this and agreed to keep the place under observation.

Branford (Indian Neck)

At the request of the local health officer, inspection was made of the sewage disposal plants at the Owenego house. The sewage from the main house is treated in three septic tanks and the effluent discharged into the soil through vitrified tile underdrains. At times some of the sewage would come to the surface of the ground through the drains. Upon being advised how to remedy this condition, the proprietor agreed to take up the vitrified underdrains and substitute agricultural tile, increasing the number of lineal feet and rearranging the lines to secure maximum percolation. The septic tanks were in good condition and appeared to be receiving proper attention.

Garage and laundry wastes from the annex are treated in a system consisting of a septic tank and subsurface drains. Apparently the system was functioning properly at the time of inspection.

Cheshire

Upon complaint of a resident of Massachusetts travelling through this State that an offensive and odorous toilet was being maintained on the property of the Connecticut Com-

Digitized by Google

pany, inspections were made September 18, 1921 and March 3, 1922 and complaint found to be justified. After somewhat protracted correspondence with the various parties interested, the toilets were removed by the Company in April, 1922.

Danbury

At the request of a local resident, inspection was made July 1920 of the privies at the Mivy Schoolhouse. Same were found to be in very poor condition and the parties interested advised to clean them out. Upon their request suitable location was pointed out for new privies, and it was also suggested that under the conditions existing at the school, it would be well to investigate the feasibility of installing chemical toilets.

Devon

Upon complaint of a local resident, inspection was made of an overflowing cesspool on the property of Mrs. French and conditions found to be such as to require immediate attention. Upon order of the local health officer, a new cesspool was installed.

East Granby

Co-operating with the Bureau of Preventable Diseases in investigating a typhoid outbreak at the Hazelwood Plantation, inspection was made October 24, 1921. About 80 people were living in a small community of tenements and boarding houses on the plantation amid the crudest of sanitary conditions. Privies, usually located in dark corners of woodsheds, were but little more than seats above the ground and naturally considerable excreta was scattered about the premises near children's play places, chicken yards or hog pens and exposed to flies. Shallow driven wells were usually less than 25 feet from privies. A typhoid carrier employed by the company about a month before the outbreak, probably was the source of the infection and the insanitary conditions outlined above helped to spread it so that typhoid developed in about 10% of the community population. Prompt action by local and State health authorities and the free use of chloride of lime by the farm management prevented a larger number of cases. The American Sumatra Tobacco Company which owns the

Digitized by Google

plantation, were advised to install a modern water supply and sewage disposal system, clean the present premises and maintain them in a sanitary condition.

East Litchfield

Inspection was made of the pollution of a brook in Campville flowing through the Scoville and Leonard properties. It was found that the Local Health Officer had made an investigation, found that the water was contaminated, and had posted the brook warning the people not to drink it.

Fairfield

January 10, 1921, inspection was made of obstructed drainage of properties on Villa Avenue. The Health Officer was advised that the problem involved legal questions and should be referred to the County Health Officer for instructions. It was suggested, however, that separate cesspools be provided to take care of the kitchen wastes from each house.

Guilford

At the request of the local health officer, inspections were made October 10, 1921 of cesspool nuisances on the properties of J. Harrison Monroe and C. C. Markham. The Monroe cesspool receives soda fountain wastes in addition to domestic sewage. The sewage should first be passed through a septic tank and another cesspool will probably be necessary. There are five cesspools on the property of Mr. Markham, only two of which were in use at the time of inspection. The ground is unsuited for cesspools and a system consisting of a septic tank and tile fields should be installed.

Middletown

At the request of the County authorities, inspection was made November 15, 1921 of the outside boys' privy of the Middlesex County Home. In order to place the privy in proper sanitary condition the County authorities were advised to clean the pit and make other necessary alterations.

Digitized by Google

Milford (Fort Trumbull Beach)

Upon complaint of a local resident, investigation was made May 25, 1922 of a sewage nuisance on East Broadway. It was found that several parties, including the complainant, were discharging cesspool or septic tank effluent into a small open ditch. All concerned were instructed to abate this nuisance by providing additional cesspools of proper size. This should be successful as the soil is porous and takes seepage readily. All concerned agreed to follow the instructions given.

Milford

July 21, 1920, inspected condition of privy on Barnes property and interviewed the Health Officer. The condition is typical of most low lying shore developments where sewage disposal by vaults is practically out of the question on account of the tide conditions.

Montville

September 20, 1920, inspection was made of site for proposed housing project at Montville. The consulting engineers were advised generally, what form of sewage disposal would be satisfactory to the Bureau. Nothing further was heard of the project.

Mystic

August 17, 1920, inspected disposal at Lords Point Inn. As a result, orders were issued to the owner to correct conditions on or before August 21, 1920.

Mystic

August 26, 1920, inspected insanitary conditions at No. 17 Willow St. At the request of the Health Officer, agreed to write the owners, which was done, notifying them to clean out privies and remove rubbish, ashes and garbage on or before September 11.

Naugatuck

Several complaints having been received of lack of sewerage facilities on Hoadley St., matter was investigated March 16, 1921, and parties advised to connect with the public sewer on Hoadley St. No action developing,

Digitized by Google

a reinspection was made in company with the Health Officer and the different property owners interviewed. The Health Officer, after a conference, suggested that he try to get an agreement between the property owners which would obviate the necessity of their connecting with the sewer immediately. Since the sewer on Hoadley St. would have to be extended to serve these properties and since all the property owners are poor and most of them out of work, the matter was left with the Health Officer to adjust in this way if he could.

Short Beach

On September 19, 1921, several sewage disposal problems were investigated. The sewage drain from the property of Silas J. Stowe empties onto the property of abutting owners, who object very strongly to it. They were previously advised by the local health officer to take the matter up through their attorneys. The effluent of the septic tank of the Granite Bay Hotel was overflowing onto the ground. The owner promised to have this condition corrected within a short time.

The septic tank on the property of Phillip Doeppensmith showed evidence of having overflowed onto the ground, although alterations had apparently been recently made. As a water supply pipe passes close to the tank, there is very serious danger of the water becoming polluted. The owner was advised of these conditions and requested to remedy them.

The relaying of drains in the community park was also inspected and advice given as to details of construction which had been puzzling the foreman in charge.

Simsbury

On the initiative of the Bureau, inspection was made April 28, 1922 of the septic tank for the housing development of the Ensign-Bickford Company. The tank was found to be functioning properly, and no nuisance was created at the point of discharge of the effluent into the Farmington River.

South Coventry

At the request of the local Health Officer, inspection was made May 29, 1922 of the cesspool of Gregory Lipsky. It

Digitized by Google

was found that the seepage from the cesspool entered the cellar of a nearby building belonging to another party. Mr. Lipsky was instructed to alter the cesspool and make it watertight, thus converting it into a septic tank and a suitable location was pointed out for another cesspool to receive the effluent from the septic tank.

Stonington

Upon complaint of Mr. L. F. Weeks of the pollution of a bathing beach in front of his cottage at Lord's Point, inspections were made May 15 and June 6, 1922. Several sewers were found to be discharging into tide water near Mr. Week's property. The sewers were constructed prior to 1917 and it is Mr. Week's idea to now establish a bathing beach for his own use near the sewer outlets and he is desirous of having the sewers abolished. It is proposed to settle the matter by holding a public hearing before the Public Health Council at the place in question.

Suffield

August 6, 1920, inspection was made of sewage disposal at the Town Farm with the First Selectman. Advice was given in relation to location and size of tank to properly take care of the sewage. The tank was subsequently installed and found to be operating in a satisfactory manner.

Terryville

At the request of the local health officer, inspection was made March 14, 1922, of the site of a proposed grammar school to determine proper methods of sewage disposal. The sewage can be piped a distance of 300 feet to connect with an existing sewer or a disposal plant can be installed at the site as conditions favor septic tank treatment followed by seepage through leaching cesspools.

Trumbull

Upon the request of the local Health Officer, inspection was made May 24, 1922 of several properties in order to assist the local authorities in selecting a suitable school site, particularly from the standpoint of sewage disposal. The most favorable site was found to be on White Plain Street, opposite the Nichols Memorial Library. The land

Digitized by Google

is at present owned by the Bridgeport Hydraulic Company and is on the watershed of the Pequonnoc River, which is used as an emergency water supply by the Company. If this plot of land is purchased, a subsoil sewage disposal system will be installed.

Unionville

At the request of a resident of Unionville, inspection was made May 24, 1922 of the disposal of excreta of two typhoid patients on the Unionville-Collinsville road. One of the patients, Harold Mixstadt resided on the watershed of the Unionville Water Co., the other, Arthur Kuss was just off the shed. Dr. R. B. Cox, the attending physician for both patients instructed that the excreta be disinfected in the receptacles with lysol, then buried in earth pits and covered with lime and earth. These directions were carefully followed at the Mixstadt place, but only partially at the Kuss place. The importance of following these directions was made clear to Mrs. Kuss who assured the inspector that they would be carefully complied with in the future.

Wallingford

On October 19, 1921 inspection was made of the sewage disposal plant at Gaylord Farm Sanitarium. The work was completed and operation started October 16, 1921. The general appearance of the plant was satisfactory and the installation appeared to be well built. The effluent was well clarified at the time of inspection.

The plant consists of a bar grid, Imhoff tank, hypochlorite solution tank and feed pipes. The Imhoff tank effluent is sterilized with 7-10 lbs. hypochlorite per 1,000 gallons, which is equivalent to a dose of about 20 parts per million of available chlorine. This rate should insure efficient sterilization. The sterilized effluent is discharged into ditches in loamy soil on a hillside, being ultimately absorbed by the ground and vegetation.

Inspection was also made of the springs furnishing the water supply to the institution. Although a constant flow was obtained, the water level in the spring was considerably below normal due to the prolonged spell of dry weather at that time.

Digitized by Google

Washington

Complaint of sewage disposal from office building at site of new dam for new water supply for the City of Waterbury, received November 1, 1921, was referred to the Chief Engineer who agreed to look into the matter and see that it was remedied.

Waterbury

Complaint by letter of May 16, 1921 of overflowing cesspools on Grandview Avenue was investigated May 24, 1921 and referred to the Health Officer who agreed to give the matter his close attention and have it remedied.

Waterford

Upon complaint of a local resident, inspection was made May 18, 1922 of the privy on the property of Isaac Chappell on the New Haven turnpike. The privy is located on the dividing line between the property of Mr. Chappell and the complainant, and 50 feet from the house of the latter. The privy was in very good condition at the time of inspection and if maintained so should constitute no grounds for complaint.

West Hartford

Upon complaint from a local resident, inspection was made September 9, 1922, of sink drainage discharging into a small stream flowing under the highway on South Main Street. The owner was ordered to connect to the Hartford sewer in front of his property, by the local health officer, but at the time of inspection this was not done. The owner assured the inspector that he had ordered a plumber to do this work but the plumber had been unable to get around to it. The connection was made the week after inspection. This connection was the last of four on the same street ordered by the local health officer.

West Hartford

Inspection was made on April 12, 1922, of a private sewer owned and operated by the Hartford Water Works on their property in West Hartford. This sewer was built to take care of the sewage from the office and a dwelling house owned by the waterworks. This system con-

Digitized by Google

sists of a tank and filter bed located off the watershed east of the spillway of No. 1 Reservoir. Three houses located across the highway from the waterworks property are connected to this sewer. Two new houses have been built recently and permission was asked to connect to the sewer, which was refused by the waterworks manager. As this is a privately owned sewer, the stand taken by the manager was justified.

West Haven

At the request of the local health officer, inspection was made of waste disposal from the Weideman Brewery. There are three general sources of waste, mash from brewing, washings from barrels and floors and cooling water. The wastes discharged into a small ditch where decomposition set in during the warm weather causing nuisance. A small experiment plant was designed by the Bureau and installed by the management for the treatment of the mash wastes. The experiment plant consisted of a septic tank seeded with manure to insure alkaline septic action, followed by sand filtration. As operated by the management, the plant was treating about twenty times as much waste as called for in the design. Results therefore were very poor. The management has improved the condition of the ditch by keeping it clean, so that at a reinspection May 10, 1922 no nuisance was observed. Compared to the volume of condenser and cooling water, the polluting wastes are at present very small.

West Haven

At the request of the local health officer inspection was made of the Chas. Clark Dairy May 3, 1922. This dairy has been the cause of complaint by reason of pollution of a brook by washings from cans and bottles. The cooling water, being unpolluted could be collected in a separate sewer and discharged into the brook without causing offense. The polluted wastes could either be treated with lime and alum, filtered through sand and discharged into the brook, or the untreated wastes could be collected in a tank and pumped into the city sewer, a distance of about 600 feet. This latter method was recommended to the proprietor as being the best solution of the problem and he promised to put it into effect. This, however, had not been done by June 30, 1922 but it is understood that several changes have been made in the creamery to lessen pollution of the brook.

Digitized by Google

Wethersfield

May 20, 1921, inspection was made of overflowing cesspool at 214 North Main St. The Health Officer stated that plans were in the works for remedying the conditions and agreed to keep the property under observation.

Willimantic

Investigation was made May 16, 1922 of a complaint of an overflowing cesspool from the Clark Maternity Hospital, 484 Jackson St. The hospital is located on one of the oldest streets in the city on which many unsatisfactory cesspools are installed. It was recommended that the entire street be sewered but so far no action has been taken by the city officials. The only other alternative is for the local health officer to see that the cesspools are cleaned out often enough to prevent overflowing. This method is very unsatisfactory and in time will probably be as expensive to the property owners as the construction of a sewer. In the meantime, this section will be without the sanitary comforts and protection of proper sewage disposal.

Woodbury

At the request of the local Health Officer, inspection was made September 26, 1921 of the grounds and cesspool of the High School. It was feared that pollution was reaching the well of Mr. C. F. Martin from the school cesspool. Inspection showed this to be extremely unlikely. As new toilet fixtures are to be installed in the school, advice was requested as to location and type of sewage disposal system. A suitable site was pointed out and drawings furnished for a system consisting of a septic tank and leaching cesspool. The system was installed and a subsequent inspection showed it to be operating in a very satisfactory manner.

Woodbury

At the request of the local Health Officer, inspection was made June 28, 1922 of the property of Miss Underwood in order to advise on the proper method of sewage disposal for her residence. A site was pointed out and drawings were furnished for a system consisting of a septic tank and sand filters, the effluent to be discharged into a nearby brook.

Digitized by Google

ODOR NUISANCE

Unless poisonous, odors alone are usually not regarded as detrimental to the public health. Where an odor nuisance exists, however, insanitary conditions are usually responsible for it and in this way odor nuisance is generally directly related to the public health. The complaints received by the Bureau have been investigated, the cause of odor nuisance determined, corrective measures pointed out and the parties responsible for insanitary conditions causing odor nuisance informed to immediately correct same. In a number of cases reinspections were made to make certain that the instructions of the Bureau were followed. The investigations made during the past two years are briefly summed up as follows.

Ansonia

May 24, 1921, inspection was made at request of Supervising Nurse of insanitary conditions about a slaughter house on Powe St. There was no evidence of recent slaughtering having been done on the property, nor had the Health Officer any knowledge that there had been any done there. The Health Officer agreed to keep the place under careful surveillance.

Bloomfield

June 14, 1921, an inspection was made of the Leathen, Jensen and Brandt properties and instructions were issued to the owners to clean up their places and put them in sanitary condition.

Bloomfield

On June 14, 1921, the Health Officer was advised of the complaint of insanitary condition on Cottage Grove Road. He was requested to see that recommendations made as a result of inspection by this Bureau were carried out.

Bloomfield

September 13, 1920, investigated complaint of insanitary piggery. The condition of the pig pen and surroundings were much better than the average and very little odor was noticed.

Digitized by Google

Bloomfield

Upon complaint of a local resident, inspection was made of a pig pen owned by Mr. C. F. Phillips on Hillcrest Avenue. Two pigs are kept in a pen 12 ft. x 4 ft. and fed on meal and bread only. The pen was exceptionally clean and there was no odor at the time of inspection. The inspector was informed that this was the usual condition of the pen and it was apparent that the owner was accustomed to maintain his premises in a clean condition.

Bolton

Upon complaint, inspection was made September 30, 1921 of the pig pen of W. B. Martin located adjacent to the State Highway at Bolton. Considerable garbage and rubbish scattered on the ground created a disagreeable odor nuisance. Upon instruction from the inspector, the pen was cleaned. Shortly afterwards the pigs were sold and the pen abandoned.

Branford (Indian Neck)

Upon request of the local Health Officer, inspection was made July 26, 1921, of the pig pen owned by Ralph Tricotelli. The pen, which was large enough for only four pigs was used for 30. The place was extremely dirty and odorous. As the owner also keeps cows and sells milk and cheese, the matter was referred to the Dairy and Food Commissioner. The Bureau was informed that the Dairy and Food Commissioner prohibited the sale of dairy products from the place until it was placed in proper sanitary condition.

Clinton

Upon complaint of a local resident, inspection was made September 14, 1921 of a garbage nuisance on the property of Mrs. Chalker at Clinton Beach. Considerable garbage and numerous flies were found on the property. There is a regular garbage collection system at the beach, the cottage owners paying a fee of $2.00 per season to have the garbage removed. Mrs. Chalker promised to clean up her premises and have the garbage removed by the regular collector.

Digitized by Google

Colchester

At the request of the local Health Officer, inspection was made May 29, 1922 of the slaughter house of John Litfin. Both the inside and vicinity of the slaughter house were extremely offensive from filth and odor. It was recommended that the local Health Officer proceed under authority of Section 2405, General Statutes of Connecticut, Revision of 1918, and prohibit all slaughtering until the place is properly cleaned up and facilities provided to maintain it in proper condition.

Danbury

July 9, 1920, inspection was made of piggery which was located on a brook running through a pasture from which cattle drank. The owner of the piggery was advised as to the proper care of the garbage to prevent pollution of the brook and agreed to see that the instructions were carried out.

Danielson

At the request of the local Health Officer, inspection was made February 7, 1922 of a smoke nuisance from a fire on the so-called city dump on the property of W. W. Clark. Once a year a fire is started on the dump, but the last fire lasted about two days and the debris smouldered and emitted considerable smoke. The fire was finally extinguished by using a large volume of water. Upon instruction from the inspector, the owner agreed to level off the dump and keep garbage and putrescible matter covered with ashes.

Durham

Upon request of the town officials, inspection was made July 22, 1921 of a slaughter house operated by Mr. Alpert. The building was in a very insanitary condition, infested with flies and giving off considerable stench. The local Health Officer was informed of conditions and advised the Bureau that he would order slaughtering discontinued until proper facilities were provided and the place cleaned and maintained in a sanitary condition.

Digitized by Google

East Hartford

September 17, 1920, complaint of gas and smoke nuisance in blacksmith shop of New York, New Haven and Hartford Railroad Company was investigated. As a result the Superintendent agreed to try to arrange some method of carrying off the gas and smoke that would be satisfactory to all the employees.

East Hartford

On the initiative of the Bureau, reinspection was made of the rear of Weinstein Block at 1252 Main Street. A previous inspection had been made in 1921 due to a complaint from the accumulation of garbage and rubbish and the owner ordered to abate the nuisance. Conditions had been greatly improved at the time of the reinspection but maintaining proper cleanliness is difficult as the town has no regular system of collection of garbage and rubbish.

Mystic

February 17, 1921, investigated complaint of odors from bones, scraps and so forth, in barn used for storage purposes on Pearl St. Health Officer had the place under observation and stated that he had issued the necessary orders and that they had been carried out.

New Britain

September 20, 1920, inspection was made of sanitary condition in the yards in the rear of 195-199 Oak St. At the time of the inspection, the yards appeared to be in fairly good condition. The Sanitary Inspector for the City agreed to keep the matter under observation.

Newington

Upon complaint of a local resident investigation was made June 13, 1922 of odor nuisance from garbage at the Furnam Farm. Mr. Furnam has a contract to collect garbage from New Britain. About twelve loads are collected weekly and fed to 200 pigs on a 5 acre tract. The ground is plowed under once a week and sometimes twice a week in hot weather. The ground was freshly plowed and only a small amount of garbage exposed and there was hardly any odor at the time of inspection.

Digitized by Google

North Haven

Complaint was received in February, 1922, that cars of manure standing for several days on the railroad siding in the center of town were causing serious odor nuisance. Further nuisance was caused by the slow unloading of the cars and transportation of the manure through the town. The matter was referred to the local health officer who made a thorough investigation and found that the complaint was fully justified. The health officer was furnished with a set of regulations governing the transportation of manure, which, if enforced, should be effective in keeping odors down to a minimum.

Norwich

January 21, 1921, inspection was made of dump in Greenville which had been on fire for some time. The fire started October 31, 1920 and efforts to extinguish it by blasting were not successful, neither was the use of water forced through a fire hose. The Fire Chief suggested that the fire be left to burn itself out. The Department made the following recommendations:

1. That the United States Finishing Co. be notified to burn all refuse in an incinerator.
2. That only clean cinders and ashes be put on the dump.
3. That the City be notified to take no more cinders until the fire is extinguished.
4. That the dump be covered with one foot of sand and gravel.

Orange

July 7, 1920, inspection was made of public dump on Water St., West Haven. The dump was in a very insanitary condition and was a breeding place for rats and mosquitoes. The attorney in charge of the property was notified and he agreed to see that action was taken to clean it up. Later on, he advised us verbally that conditions there had been greatly improved.

Plymouth

April 20, 1921, in company with the Health Officer, inspected property at No. 8 Bushnell St. General sanitary

Digitized by Google

condition of the place appeared to be good and the owner was willing to do anything the Health Officer suggested. Several further complaints in relation to this place were received, all of which were referred to the Health Officer.

Stamford

July 21, 1920, inspection was made of the four motion picture theatres. Conditions were found to be excellent in the first, satisfactory in the second, fair in the third, and very poor in the fourth. Recommendations were made for remedying the conditions in the fourth one and transmitted to the Health Officer with the request that he see that they were carried out.

Stratford (Nell's Island)

Upon complaint of a resident of Stratford, investigation was made March 22, 1922 of odor and fly nuisance from the putrefaction of mussels piled on Nell's Island in the town of Milford. In former years, fishermen collected the shells of dead mussels from the Housatonic River bed and sold them to oyster growers. The shells were placed in oyster spawning beds to afford a surface to which the spawn would attach, thus assisting in forming the oyster "set". About ten years ago, the supply of shells in the Housatonic River having become exhausted, the fishermen then collected live mussels, piled them on the Milford shore and neighboring islands, where exposed to the air they died and the meaty part putrified, producing considerable odor and breeding many flies and maggots. Nell's Island was extensively used for the piling of mussels, and being only half a mile from the Stratford shore, the odors were particularly obnoxious at this place and resulted in numerous complaints. The fishermen were ordered to apply a disinfectant to the shell piles, but on account of the cost, they were very sparing in its use and conditions were improved very little if any. Matters became so objectionable that the offenders were arrested and fined in the local courts for creating and maintaining public nuisances. One case, however, was carried to a higher court, where the decision of the local court was reversed. The action of the local authorities, however, prevented nuisance in 1918, 1919 and 1920, but in 1921 the piling of shells was resumed. The present complaint is in anticipation of a recurrence of the nuisance during the season of 1922. The Health Officer

Digitized by Google

of Milford, under whose jurisdiction the matter comes, agreed to keep the place under observation and take all proper means to prevent such recurrence. No complaints from odor nuisance from the piling of mussels were received by the Bureau during the mussel season of 1922, extending from April to July.

Suffield

At the request of the local Health Officer, inspection was made October 7, 1921 of odor nuisance from unloading of manure at Boston Neck Station. The Health Officer was advised that the best remedy would be a town ordinance forbidding the carting of manure between certain dates.

Suffield

November 1, 1920, investigated nuisance caused by unloading manure by the American Sumatra Tobacco Company on siding near the Berlin-Suffield Trap Rock Company. The Manager of the Company was informed that the present method of unloading was a nuisance and advised to correct it.

Waterbury

August 20, 1920, inspection was made of complaint of insanitary conditions on Albert Place in company with Health Officer. The principal objection was the manure pile. The Health Officer suggested building a concrete, fly-tight manure pit, which the owners agreed to.

West Hartford

February 7, 1921, dump in the rear of property at No. 1034 Farmington Avenue, was investigated. No care was taken in depositing the material on the dump or in covering the putrescible and unsightly matter. The Health Officer was notified to have the dump leveled off, to prohibit the dumping of garbage, tin cans and rubbish and to see that all deposits that might be unsightly or odorous were carefully covered.

March 17, 1921, reinspected the dump to see if the recommendations of the Department had been carried out. They had been partially.

Digitized by Google

Wethersfield

Numerous complaints having been received of odor from a large manure pile on the Isaacson farm during the spring of 1922, the Bureau undertook to see that conditions were remedied. About a dozen inspections were made to see that the recommendations of the Bureau were being carried out and by keeping in close touch with the situation, this nuisance was finally abated. The pile was about 40 feet long, 20 feet wide and 6 feet high and contained considerable garbage and carcasses of animals besides the manure. The dumping of garbage and carcasses on the pile was ordered discontinued and a liberal covering of lime ordered placed over the pile. These measures proved effective in abating the nuisance. The carcasses were delivered to the farm from Hartford and after calling the matter to the attention of the Hartford authorities, the city passed an ordinance providing for collection and disposal of carcasses to avoid nuisance to the general public.

Willimantic

September 28, 1920, investigated complaint of sanitary condition of dump on Willow Brook, Adelfort St. Conditions were found to be particularly bad and the Local Health Officer was interviewed and requested to take action towards having the conditions remedied.

Windsor

July 6, 1920, piggery at Wilson Station No. 5, was inspected in company with the Health Officer. Conditions were found to be very bad and instructions were left with the wife of the owner to clean up the entire premises. The Health Officer is to keep the place under observation and see that the instructions are carried out. The piggery was later abandoned and the premises cleaned up.

Winsted

August 3, 1920, inspected the Town dump. At the time of inspection, the Health Officer was interviewed, who agreed to take the matter up with the First Selectman and have a man on the dump continuously.

Digitized by Google

DRAINAGE NUISANCES

Drainage nuisances are generally due to misunderstanding or violation of the law that no obstruction must be placed in the way of natural drainage. Cause for complaint is also found where mosquitoes breed in naturally swampy areas. The elimination of drainage nuisances where conditions are obviously not contrary to law is often a difficult and costly process. The complaints submitted to the Bureau, however, have been investigated and the interested parties advised as to remedial measures. A summary of the investigations is given below.

Branford

July 10, 1920, inspection was made of rubbish in rear of Carr property and dump at foot of Hillside Avenue obstructing flow of brook. Selectman was advised that the situation needed immediate attention.

Cromwell

June 3, 1921, inspection of improper drainage in the rear of garage on Main St. showed that refusal of property owner lower down to open his ditch was the main cause of the stoppage. The Health Officer was written asking him to take action in the matter.

Durham

Upon complaint of a local resident, inspection was made July 22, 1921 of a drainage nuisance caused by an overflowing watering trough maintained by the Town. The trough was found to be in a poor state of repair, the water unsightly and at times overflowing into the street. The local authorities stated that these conditions were due to lack of funds. If funds can be raised, the trough will be repaired, if not it will be abandoned.

Meriden

Upon complaint by a local resident, investigation was made May 1, 1922 and May 11, 1922, of obstruction to natural drainage by stopping up a culvert beneath the highway on Macy Avenue. In 1921, the culvert was cleaned and the natural drainage altered by means of a pipe line across the property of Paul Carbella which carried the

Digitized by Google

drainage onto the property of Joe Victoria. The latter thereupon brought suit against Carbella, the Court of Common Pleas awarding Victoria $1.00 damages and ordering Carbella to restore the natural drainage. The pipe line was removed and in order to prevent the drainage from accumulating on his property, as it would do naturally, Carbella stopped up the culvert, thus pooling the water on the Lindquist, Britney and McMahon properties and resulting in the present complaint. The stopping of the culvert is obviously an act diverting the natural drainage and relief to parties affected is recourse to the court for an order restraining Carbella from interfering with the natural drainage.

New Britain

Upon complaint of Mike Bollair, investigation was made of a mosquito breeding swamp on his property at Corbin's Corner on the Farmington Road. There was no natural drainage outlet to the swamp. Existing conditions could be eliminated only at great expense by providing artificial drainage including pumping, or by filling in the swamp. Application of oil would probably afford temporary relief.

Southington

August 4, 1920, inspection was made of the Baby Farm on Shuttle Meadow Road. Recommendations in regard to well, privy and general sanitary conditions were made which were transmitted to the State Board of Charities who followed the matter up to see that they were carried out.

Southington

On request of Mr. S. H. McKenzie, Superintendent of the Southington Water Company, the obstruction of a brook which flows through the property of Joseph Avitable and Titti Aldi was investigated on November 30, 1921. On the Avitable property considerable refuse had been thrown into the brook. This was removed during the inspection. After leaving the Avitable and Aldi properties the brook flows through a culvert under the street. Considerable of the refuse thrown into the brook has been carried into the culvert and decreased the flow through it. It was agreed that the parties interested get together with the town officials and clean out the culvert.

Digitized by Google

Suffield

Reinspection made May 20, 1921 of drainage ditch in the rear of Day St. showed that conditions had not been much improved since the last inspection.

Waterbury

Upon complaint of Miss M. E. Read, inspection was made of a drainage nuisance on her property on Calumet Street. No evidence was apparent during the inspection that the drainage water contained sewage or that conditions were prejudicial to public health. Drainage water, however, was found running down the driveway of Miss Read to the street. Relief for conditions such as this should lie in a civil action restraining the parties at fault. All properties would, however, be benefited if a city sewer were constructed on Calumet Street.

Westbrook

February 16, 1921, inspected cellar of lunch room on Spencer Avenue. Owner was advised to make repairs and notify us when they were completed so that we could make a reinspection.

West Hartford

May 26, 1921, complaint of stagnant water on South Quaker Lane, was investigated. There is no drainage system to take off this water and the complainant was advised to fill in the low spots.

West Hartford

Complaint received of mosquito breeding place on Farmington Road near Corbins Corners was referred to Health Officers of New Britain and West Hartford who both disclaimed jurisdiction. Matter pending.

West Hartford

Upon request of Mr. Louis Bell, his property on Boulanger Avenue was inspected April 12, 1922, with regard to drainage and sewage disposal. Several sewers receiving cellar drainage from nearby houses formerly discharged into a brook near Mr. Bell's property. A private road con-

Digitized by Google

structed about four years ago obstructs the natural drainage so that this water collects on Mr. Bell's property. Mr. Bell was advised to arrange with the owner of the road to construct a deep culvert to restore the natural drainage. He stated that he was willing to collect the water in a concrete tank on his property and pipe it to the culvert at his own expense. Upon request for information as to disposal of his sewage, he was advised to construct an under-drained cinder trench for the overflow of his cesspool, the filtered effluent to discharge into the nearby brook.

Wethersfield

Upon complaint of a nearby resident, inspection was made June 14, 1922 of a mosquito breeding swamp on the property of Mrs. Morgan at Station 11½, Wolcot Hill Road. The swamp, in addition to breeding mosquitoes was found to give off considerable odor from the stagnating water. The best remedy would be to fill in the swamp.

Winsted

Upon complaint of Mr. A. Sidoti, that sewage from a nearby sewer was flooding his cellar, inspection of his property was made Sept. 19, 1921. The rear of the building is located flush with the bank of the Mad River and the cellar bottom is open earth. The cellar was partially flooded during the inspection but by water seeping through the cellar bottom and not by sewage. Although a drainage ditch carrying domestic sewage passed through the cellar, this is so partitioned off by heavy foundation walls that there is but little likelihood of the sewage flooding the cellar.

SCHOOLS

The question of education and methods of conducting our schools has rightfully been a matter for thoughtful consideration by the general public as well as educational leaders and as a result improvements are being constantly made in many directions. It is not our purpose to present a comprehensive discussion of the many phases entering into school activities but we do wish to point out the tremendous influence that schools do exert upon the public health and emphasize the need of certain improvements to safeguard the health and promote the welfare of school children, and, indirectly, the general public.

Digitized by Google

The foundations of character and many life-long habits are laid in the public schools and the importance of establishing correct fundamentals for our future citizens is, happily, very well recognized. Intimate association and close personal contact are outstanding features of paramount significance as affecting the health of the pupils. Certain conditions particularly favor the development and spread of contagious disease and, in several instances epidemics of smallpox, diphtheria, whooping cough, chickenpox, have been traced directly to school conditions. That such epidemics have not been more serious we can attribute to a considerable extent to local medical supervision either by physicians or school nurses. The importance of this work cannot be overestimated.

In the cities and larger communities trouble is generally due to congestion. The building of new schools in most cases, lags far behind the increase in population. In general, however, the city schools are well built, sanitary conditions are good, and regular medical inspection is provided.

In rural and semi-rural districts, congestion is also an important problem, but is overshadowed by questions of general sanitation, particularly water supply and sewage disposal. In many cases the schools are old, not in the best repair, the equipment is poor and it is very difficult to maintain comfortable temperature and proper ventilation during the winter. School wells are often improperly located, poorly constructed and not well protected against contamination from hands, surface drainage and pollution from privies or cesspools. The school privies are often poorly constructed, neglected in maintenance, exposed to flies, offensive in appearance and disagreeably odorous. Many such privies need only the introduction of a typhoid germ to cause a very serious, and probably widespread, epidemic.

The future citizen when educated under these conditions becomes accustomed to the crudest of sanitary conveniences. The Bureau of Sanitary Engineering is firmly convinced that cleanliness and healthful habits can be taught fully as well in the rural as in the city school. The best conditions of water supply, sewage disposal, cleanliness of premises, facilities for heating, lighting and ventilation should be provided for the pupils and habits of personal hygiene and cleanliness inculcated, which will eventually find expression in greatly improved sanitation of rural residences

Digitized by Google

This feature of sanitation is emphasized because of the increasing importance of the part played by the rural population in the work of the nation.

The Bureau has, therefore, welcomed requests for inspection and advice pertaining to school sanitation and has given the most careful consideration to the problems coming to its notice. The Report of the State Department of Health, 1919-1920, contains a summary of a survey covering 75 of the 168 towns of the State. With the limited appropriation of the Bureau, it was, unfortunately, impossible to continue this work. The hearty response by the various school authorities in adopting measures for sanitary improvement including in several cases the construction of new up-to-date schools makes this particularly regrettable. During the past year, the Bureau has necessarily confined itself to investigations upon request. Co-operation between school and health authorities, both local and State, has been so marked as to deserve special mention and the results obtained have been highly gratifying. The Bureau is deeply impressed with the fact that completion of the school survey with subsequent reinspection would be a work of immeasurable value to the State as a whole.

The following is a brief summary of the investigations made during the past year.

Bloomfield

Upon complaint of objectionable conditions at a temporary school, inspection was made January 30, 1922, of the Center School, temporary school room in the Methodist Episcopal Church and the school on Wintonbury Avenue at Trolley Station 2. It was found that the village had outgrown its school facilities requiring the temporary use of the church. A new eight-room school in the Blue Hills section, under erection at the time of inspection will relieve conditions considerably so that the church will no longer be required for school purposes after the present term.

Heat and light were unsatisfactory at the Church. Ventilation was fairly good. Drinking water was obtained from a neighbor's well. Sewage disposal was unsatisfactory, privies poorly located and in poor condition being used.

Conditions were very satisfactory at the Center School with the exception of the water supply. Water is pumped from a dug well and at times considerable sand is brought up with the water.

Digitized by Google

Although an old school, that on Wintonbury Avenue was found in very good condition with the exception of the girls' privy, which needed cleaning out.

Upon being informed of the necessary changes to remedy conditions, the local authorities acted promptly so that the schools were soon brought up to the proper sanitary standards.

Washington

On receipt of a complaint from a resident of Washington anticipating insanitary conditions at the school grounds to be used for the Old Home Day Fair, a thorough inspection was made September 2, 1921 and a reinspection September 6, 1921, the day before starting school sessions. It was found that every precaution had been taken to maintain proper sanitary conditions and with the exception of vegetable refuse from a fruit stand, the grounds, toilets and buildings were in very good condition. The small pile of vegetable refuse was removed at the end of the fair. which lasted for only one day.

West Hartford

At the direction of the Commissioner of Health a detailed survey was made of the schools of West Hartford on October 3 and 4, 1921. Valuable assistance was rendered by Mr. William H. Hall, Superintendent of Schools, Mr. L. H. Bugbee, Principal of the High School and Miss Mary Buckley, School Nurse. Specific information was obtained for each of the thirteen buildings covering seating capacity, attendance, water supply, fire protection, sewage disposal, heating, lighting, ventilation, basements, yards, medical attention, washing facilities, and desk equipment.

From the standpoint of appearance, the exteriors of the buildings and grounds create a very favorable impression with but one exception, this being the Pilgrim Fathers Hall. Of the 8 public schools in the town, comprising in all 13 buildings, the Seymour Avenue School is the most up to date and the only one at which general conditions could be classed as excellent. Conditions at four of the schools are only fair, viz., the Center, West and North Grammar Schools, and the West Hartford High School. At the remaining schools, Charter Oak, East and Elmwood, they were noticeably poor. The poorest building was the Pilgrim Father's Hall, part of the Elmwood School. A detailed re-

Digitized by Google

port was made to the local officials, embodying suggestions looking toward the improvement of conditions, particularly relief from congestion. It is gratifying to note that due to the efforts of the local authorities, the town on March 28, 1922 voted to construct a new High School.

West Hartford

Upon complaint of a local physician, inspection was made of the heating facilities at the East School, January 23, 1922. To relieve congestion at the main building, an old two-story frame building, known as the Buck House and used for school purposes was purchased. Investigation showed the heating facilities to be satisfactory but the light, ventilation and general sanitary conditions very poor and practically no improvement in conditions during the school survey made by the Bureau in October 1921. A number of cases of measles, whooping cough, etc., were reported from this school, it being the only school in town where contagious diseases were found. On January 1, 1922, a new brick school containing nine classrooms, a gymnasium and assembly hall, was completed. The use of this building will do away with temporary buildings for the East School.

CAMPS

The Bureau has continued, although with lessened activity, the policy of inspecting summer camps inaugurated in 1919 and outlined, with a summary of results to that date, in the report of the State Department of Health for the two years ending June 30, 1920. That the work has been productive of good results is evidenced by the increased requests for reinspection and for advice as to improvements necessary to make conditions sanitary. Such a spirit is indeed commendable, showing as it does, the desire of many camp operators to make the improvements voluntarily rather than waiting for orders to do so.

Practically all phases of camp sanitation are covered during an inspection while the camp is in operation, including water supply, sewage disposal, washing facilities, eating and sleeping quarters, rubbish and garbage disposal, medical attention and recreation facilities. When necessary, suggestions have been made for improvement of conditions and as a rule such suggestions are well received and put into effect. In several cases, however, a general atmosphere of thoughtlessness and carelessness has been encount-

Digitized by Google

ered and the parties concerned have been unwilling to make necessary expenditures to safeguard the health and promote the comfort of the campers. By means of reinspections, necessary improvements have been gradually secured but the facilities of the Bureau are not sufficient to go into this work as extensively as it should. The camps inspected during the past two years are as follows:

Camp Inspections
July 1, 1920 to June 30, 1922.

Bantam Lake	Camp Agawing
" "	Governor's Foot Guard
" "	Camp Wamposet (2)
" "	Jewish Girls' Camp
" "	Bridgeport Y. W. C. A.
Chester	Camp Hazen
Cozy Beach	Camp Silversands (2)
Danbury	Boy Scout Camp
East Hampton	Camp Wopowog
" "	Camp Kil Kare
" "	Camp Tenamuggus
" "	Y. M. C. A. Camp
East Haddam	Camp Bethel
Ellington	Girl Scout Camp
Kent	Camp Ponemah
"	Camp Milford
Milford	Camp Milton
Niantic	Spiritualist Camp
Oxford	Camp Palmer, Knights of Columbus
Stevenson	Ansonia Y. M. C. A. Camp
Willimantic	Methodist Camp Grounds

MISCELLANEOUS INVESTIGATIONS

During the past two years, the Bureau has been called upon to make a number of investigations other than those pertaining directly to either water supply or sewage disposal. The recommendations of the Bureau, based upon field inspections have been used in many cases as the basis for correcting or preventing objectionable conditions.

Burnside

Upon complaint of an anonymous party, inspection was made June 2, 1922 of the Machine Department of the Burnside Tissue Mills with particular relation to light and ventilation. This department was found to occupy the first floor of a 50 x 30 feet brick building and was lighted

Digitized by Google

with ten windows of average size, distributed on three sides of the building and large double doors in front. In good weather these are kept open. Only two men spend about two hours per day in this room. Conditions at the time of inspection were very good and there was apparently no cause for the complaint.

Ellington

At the request of the local health officer, a complete sanitary survey was made of Crystal Lake in August, 1921. The Lake is located on the Stafford Springs Road about 6 miles from Rockville. It is bordered by about 100 summer cottages, a large hotel and a dance hall. The lake is used extensively for boating and bathing. Investigations of water supply, sewage disposal and general sanitary conditions were made at each place and bathing beaches were also inspected. The sanitary conditions ranged from the crudest to the best of sanitation. Many of the residents were very scrupulous in keeping pollution from entering the lake, but others apparently took no care to do so. A very detailed report was forwarded to the local health officer, and recommendations which would improve conditions at each place were specified. Energetic action on his part has resulted in considerable improvement in sanitation. A reinspection during the present season showed that a few owners, however, have been lax in complying with the recommendations. The local health officer has the situation well in hand and no doubt will insist on the maintenance of proper sanitary conditions in every case.

Elmwood

Upon receipt of a petition signed by thirty property owners, inspection was made November 25, 1921 of the Kaplan property on Rose Avenue, which it was proposed to use for a cemetery. The location not conforming to statutory requirements, Mr. Kaplan was so informed. The Bureau was later assured that the land would not be used for cemetery purposes.

Groton

November 20, 1920, inspection was made of new police station in the old power house. Conditions were found to be very satisfactory.

Digitized by Google

Lakeville

Upon request by a local resident for advice pertaining to the recovery of the body of Mr. E. Arnold, who was drowned in Lake Wononscopomus, the lake was visited May 20, 1921 and a number of interested local citizens and officials interviewed. It was found that funds had been raised by popular subscription and the lake dragged. Owing to the fact that the lake was about a mile in diameter and over 100 feet deep in some places, the work necessarily proceeded very slowly. Other projects, such as using dynamite to stir up the water, and employing a diver, were considered, but it was obvious that the best method of procedure would be to continue dragging the lake. It was not, however, successful, and was discontinued. On June 13, 1922, the body was found on the west shore of the lake in about two feet of water.

Mansfield

November 30, 1920, inspection was made of the Mansfield State Training School and Hospital, Mansfield, Conn. The object of the investigation was to furnish the State Department of Health with all necessary information required for formulating the report to the Governor and for use in emergencies, such as possible sources of infection and preventing epidemic sickness among the inmates.

The information secured and on file in the Department, is as follows: A map showing present buildings, service pipes for water and sewers, detail description of each building, a map of the watershed with location of all houses, a list of houses showing the number of persons, cattle and sanitary conditions of their premises, a description of present sewer system and disposal plant, relation of Institution with other state institutions, and conclusions and recommendations.

At present, there are 10 buildings for inmates and 2 others under construction,—1 power house, 1 office, 1 superintendent's house, 1 carpenter shop, 1 storehouse, and 7 cottages and houses for employees. The buildings for inmates are segregated into groups, 6 buildings being on the summit of the hill and 5 at the foot of the slope. The power house is located in the center of the group. Underground conduits carrying heating pipes run from the power-house to all the buildings. The employees cottages are located on the state highway leading to Stafford.

Digitized by Google

The electric power used at the Institution is generated on the property. A spur track from the main line of the Central Vermont Railroad runs to a modern coal trestle which has just been completed.

There is no isolation hospital at the Institution. There are no fire escapes on the buildings, no hose racks in the buildings, and no risers to connect to. There are several hydrants scattered about the grounds. The buildings for the inmates are of fireproof construction, but the remaining buildings are of wood.

The approximate ratio of window space to cubical contents of room is about 3.3%.

There is approximately 12 sq. ft. of window space per patient. The ventilation is generally good. The amount of air available per patient is about 365 cu. ft. The recommended practice is between 200 and 300 cu. ft. of air per patient.

The dormitories are not crowded. An aisle about 4 feet wide is left between the sides of the cots and about 2 feet is left between the ends of the cots. The bubblers are located in the dormitories and day rooms. There are about 48 persons per bubbler.

The lavatories are all connected by 1½" pipe and the water closets are equipped with a 4" pipe and flushometer of the Sloan type. There are about 10 persons per water closet.

The watershed was inspected and every house visited. The number of occupants and cattle on it and the condition of privy and grounds noted. A map on file in the Department shows location of houses relative to streams, with number referring to description in report. This water supply is used jointly by Mansfield State Training School and Storrs Agricultural College. An old dam at the junction of the two brooks forms a small reservoir. The water is drawn from this reservoir to the pump house by an 8" pipe. At present this pipe is not completed, a 6 ft. section being left out which permits the water to flow to an auxilliary reservoir which is to be used as an emergency supply during dry weather. At present, the pump house which is a concrete structure, is under construction and a temporary pump house is being used. This is equipped with an electric driven pump, the size and capacity could not be ascertained. A chlorine apparatus of the emergency type is installed in the pump house which is heated

Digitized by Google

by a stove. At present the water is being treated with 0.4 parts of chlorine per million gallons. A 6" pipe line runs from the pump house to a steel standpipe of 50,000 gallons capacity on the school property. From this standpipe the water is distributed by gravity to the building.

Springfield, Mass.

An inspection was made May 18, 1921, in collaboration with the Bureau of Preventable Diseases, of the Tait Brothers' Creamery and Ice Cream Plant in Massachusetts, for the purpose of determining whether it had any connection with a typhoid epidemic in Hartford and Middlesex Counties. The plant seemed to be particularly well kept and supervised and nothing was found to indicate that it was in any way connected with the outbreak.

APPROVAL OF BURIAL GROUNDS

East Hartford

Upon application of Nathan Levitsky, Committee, Branch No. 343, Workmen's Circle, to use a plot of land in the Burnside Park Subdivision for cemetery purposes, inspection was made September 9, 1921. It was found that a dwelling was located within 350 feet of the proposed cemetery with no highway intervening. The location not being in conformity with section 6502, General Statutes of Connecticut, Revision of 1918, the application for the proposed cemetery was disapproved.

Hamden

Application received for approval of burying ground site for the use of the Hyman Jacobs Lodge. Approval granted July 16, 1920.

Hartford

Upon application by H. I. Epstein for approval to use a plot of land for cemetery purposes, situated in the rear of property known as 425 Barbour Street, inspection was made by the Bureau and the site found suitable for the purpose contemplated. Upon recommendation of the Bureau, the application was approved by the Department, February 18, 1922.

Digitized by Google

Hartford

Upon application of Herman I. Epstein for permission to annex a parcel of land to the Keney Park Cemetery, inspection was made and the parcel having been found suitably located, approval was recommended by the Bureau and a permit granted by the Department March 22, 1922.

Middletown

Upon application from St. Johns Church Corporation, plans and specifications for the construction of a receiving vault to be located in St. Johns Cemetery, were approved June 4, 1920.

New Haven

Application received for annexation of a plot of ground on Jewell St. in the City of New Haven to cemetery of the Independent Lodge. It developed that there were several houses within the statutory limit, and petitioners were advised that approval would not be granted until leases were obtained from these several property holders. This was done and the approval finally granted April 30, 1921.

Simsbury

Application was received from Simsbury Cemetery Association for approval of a temporary vault. Approval was granted December 24, 1921.

CONCLUSIONS

The work of the Bureau during the past two years, due to the number of calls for assistance and advice, increased so much that, with the limited personnel at our command, we have not been able to give all of them the attention they should receive.

The supervision and control of public water supplies, sewerage systems and sewage disposal works have, in most cases, been given precedence.

Summer camps, shore resorts, swimming pools, schools and miscellaneous inspections have been given such attention as the time of the men permitted without neglecting the routine work. Necessarily, more important phases of sanitation had to be neglected. This is particularly so in

Digitized by Google

relation to camps, the number of which is increasing every year, and to shore resorts, both beaches and summer hotels, which preferably should be visited before the shore season opens in the spring and be reinspected at least once during the height of the summer season. The number of calls for inspection of nuisances is increasing tremendously. It would seem as though these matters should be handled by the local authorities, but when the request states that they have appealed to them and have not received any satisfaction, we hardly feel justified in not making at least a preliminary investigation. We always try, however, to cooperate with the local authorities and keep them advised in every case.

The work of following up wells and springs, showing evidence of contamination by analyses, requires a great deal more of the time of the Bureau than it can afford to give to it. Yet when such requests are refused, there is a feeling that the Department is neglecting its duty. Some idea of the increase in work may be obtained when we compare the number of inspections for the two year period just closed with that ending in June 1920.

WORK DONE BY THE BUREAU OF SANITARY ENGINEERING.

	Two Year Period Ending June 30, 1920	Two Year Period Ending June 30, 1922.
Approvals New Water Supplies	5	4
Watershed Inspections	167	246
Special Investigations Water Supplies	30	45
Wells & Springs Sampled by Bureau	170	74
Inspections Water Supplies Used on Interstate Carriers	13	47
Approvals Sewerage Systems & Disposal Works	14	20
Inspections, Sewage Disposal Works	43	50
Approval Burial Grounds	3	7
Swimming Pool Inspections	25	20
Summer Camps & Shore Resorts Inspections	82	24
Investigations, Stream Pollution by Industrial Wastes	—*	16
Other Investigations	0	78
Total Units, Inspections, Approvals, etc.	552	631

*Investigations made by Industrial Wastes Commission.

Digitized by Google

From this tabulation it appears that there was a marked increase in all classes of work excepting inspection of summer camps and shore resorts, sampling of springs and inspection of swimming pools.

Lack of personnel accounts for the decrease in inspection of camps and shore resorts and swimming pools and the transfer of licensing of spring water vendors to the Dairy and Food Commissioner for the lesser number of springs sampled.

During the period ending June 1920, the force of the Bureau consisted of five men and one stenographer. In the Industrial Wastes Division, there were four men and a stenographer. The entire work for the period just ended has been handled by the Director, two men and a stenographer.

I do not see how this Bureau can hope to meet the demands made on it for assistance and advice unless its personnel and appropriation are largely increased.

There should be one man assigned to the supervision of Water Supplies, and he should devote his whole time to that particular work. Another man should have charge of the sewerage and sewage disposal systems, and this would keep him busy all of his time.

In addition there should be a corps of at least five inspectors to respond to general requests for miscellaneous inspections. A file and record clerk for the Bureau is an absolute necessity. This would permit the secretary to relieve the Director of a lot of routine work, attention to which, now, prevents him from giving the time required for the study of the larger problems or to mapping out a comprehensive program for his assistants, and would enable us to keep all records in proper shape for ready reference.

J. FREDERICK JACKSON,
Director.

Digitized by Google

BUREAU OF VITAL STATISTICS

July 1, 1920--June 30, 1922

Digitized by Google

Digitized by Google

BIENNIAL REPORT
BUREAU OF VITAL STATISTICS

To John T. Black, M. D.,

Commissioner of Health,

SIR: I have the honor to submit a report of the activities of the bureau of Vital Statistics for two years ending June 30, 1922. The full statistical report with tabulations will be prepared as shown and published in the Registration Reports.

Owing to the discontinuance of the punch card work during the past three years for lack of appropriation, the work of this division has been very much handicapped. The tabulations are still three years in arrears, but inasmuch as we were authorized to restore the punch card system in March of this year, we expect to have all reports complete within the next two years. The last printed report is for the year 1916 and the report for 1917 is now ready for the press.

Populations

The population of Connecticut as tabulated by the United States Census was 1,393,292 for the year 1920. The tabulated population by the Census Bureau method for the year 1921, was 1,420,576. These tabulations are used in the calculation of the rates for these two years. During the years 1917, 1918 and 1919, populations were calculated from the official State School Census, which will account for slight discrepancies between the rates as given for these years and those as published by the Census Bureau.

Births

Considerable variation will be found in the births reported from year to year, as will be shown by the following table:

Year	Population	No Births	Birth Rate
1917	1,354,930	37,571	27.7
1918	1,409,530	37,216	26.4
1919	1,464,360	33,978	23.2
1920	1,393,292	34,178	24.5
1921	1,420,576	34,091	24.0

Digitized by Google

Several methods are used to ascertain the percentage of actual births reported, the most reliable being the checking of all deaths under one year against the certificates on file. We have found that the reported births in this state at the present time are from 91 to 92 per cent. of the actual births occurring.

Stillbirths

In 1920 there were 1,217 stillbirths, which is a decrease of 48 over the previous year.

In 1921 there were 1,232 stillbirths, an increase of 15 over the previous year.

The reporting of stillbirths is not so reliable, principally because the statutes do not specifically define what constitutes a stillbirth. It is roughly estimated that about 75 per cent. of the actual stillbirths occurring are reported.

Year	Births	Stillbirths	Total	Per cent. of Total
1917	37,571	1,238	38,809	3.2
1918	37,216	1,513	38,729	3.9
1919	33,978	1,265	35,243	3.6
1920	34,178	1,217	35,395	3.4
1921	34,091	1,232	35,323	3.5

Deaths

In 1920 there were 18,923 deaths. This is an increase of 670 deaths over 1919, and the rate per 1,000 population is 13.6.

In 1921 there were 16,167 deaths. This is a decrease of 2,756 over 1920 and yields a death rate of 11.4, which is the lowest ever recorded in this state.

Total Deaths

Year	Population	Deaths	Rate
1917*	1,354,930	20,834	15.4
1918*	1,409,530	27,380	19.4
1919*	1,464,360	18,253	12.4
1920**	1,393,292	18,923	13.6
1921**	1,420,576	16,167	11.4

*State School Census.
**United States Census.

In 1921 there were 655 fewer deaths under one year. There were 1,061 less deaths from influenza and 703 less from pneumonia.

The reporting of deaths is practically 100 per cent. complete as burial without a permit is heavily penalized.

Digitized by Google

Infant Mortality

In 1921 the number of deaths of infants under one year was less than any of the preceding five years. The most marked improvement being the decrease of 1473 when 1921 is compared with 1918. The following table will show in detail the record of the preceding five years.

Year	Births	Deaths under 1 yr.	Rate per 1,000 Births
1917	37,571	3,466	92.3
1918	37,216	3,962	106.5
1919	33,978	2,928	86.2
1920	34,178	3,144	92.0
1921	34,091	2,489	73.0

Deaths and Death Rates per 100,000 Population From Certain Diseases, Year 1921

Disease	Deaths	Rate per* 100,000.
Typhoid Fever	49	3.4
Measles	43	3.0
Scarlet Fever	102	7.2
Whooping Cough	137	9.6
Diphtheria	176	12.4
Influenza	193	13.6
Tuberculosis of Lungs	1186	83.4
Other Forms Tuberculosis	172	12.1
Cerebrospinal Meningitis	47	3.3
Poliomyelitis	25	1.8
Pneumonia Lobar	640	45.1
Chicken-pox	6	0.4
Dysentery	9	0.6
Encephalitis Lethargica	33	2.3
Malaria	2	0.1
Mumps	2	0.1
Septic Sore Throat	9	0.6
Tetanus	17	1.2
Trichnosis	1	0.07
Typhus Fever	1	0.07
Gonorrhoea	7	0.5
Syphilis	90	6.3

*Based on Population as of July 1, 1921; 1,420,576 U. S. Census.

INFLUENZA

1917-1921

Year	Deaths	Rate
1917	360	26.5
1918	7,602	539.3
1919	1,583	108.1
1920	1,254	90.0
1921	193	13.6

TYPHOID FEVER

1917-1921

Year	Deaths	Rate
1917	119	8.8
1918	74	5.2
1919	56	3.8
1920	58	4.2
1921	49	3.4

Digitized by Google

TUBERCULOSIS
1917-1921

Year	Deaths	Rate
1917	2,078	153.4
1918	2,064	146.4
1919	1,707	116.6
1920	1,651	118.5
1921	1,358	95.6

PNEUMONIA (All forms)
1917-1921

Year	Deaths	Rate
1917	2,661	196.4
1918	2,991	212.2
1919	1,632	111.4
1920	2,084	149.6
1921	1,381	97.2

DIPHTHERIA
1917-1921

Year	Deaths	Rate
1917	234	17.3
1918	201	14.3
1919	253	17.3
1920	235	16.9
1921	176	12.4

SCARLET FEVER
1917-1921

Year	Deaths	Rate
1917	21	1.5
1918	36	2.6
1919	46	3.1
1920	74	5.3
1921	102	7.2

MEASLES
1917-1921

Year	Deaths	Rate
1917	126	9.3
1918	87	6.2
1919	100	6.8
1920	137	9.8
1921	43	3.0

WHOOPING COUGH
1917-1921

Year	Deaths	Rate
1917	113	8.3
1918	279	19.8
1919	58	4.0
1920	218	15.6
1921	137	9.6

POLIOMYELITIS
1917-1921

Year	Deaths	Rate
1917	16	1.2
1918	16	1.1
1919	10	0.7
1920	23	1.7
1921	25	1.8

MENINGITIS
1917-1921

Year	Deaths	Rate
1917	188	13.9
1918	77	5.5
1919	45	3.1
1920	63	4.5
1921	47	3.3

PUERPERAL DISEASES
1917-1921

Year	Deaths	Rate per 1,000 Births and Still Births
1917	196	5.1
1918	176	4.5
1919	198	5.6
1920	194	5.5
1921	178	5.0

CANCER
1917-1921

Year	Deaths	Rate
1917	1,213	89.5
1918	1,254	89.0
1919	1,288	88.0
1920	1,390	99.8
1921	1,383	97.4

Digitized by Google

ACCIDENTS AND VIOLENCE

Suicide Excepted
1917-1921

Year	Deaths	Rate per 100,000
1917	1,494	110.3
1918	1,283	91.0
1919	1,068	72.9
1920	1,074	77.1
1921	1,026	72.2

Marriages

In 1920 there were 14,415 marriages; in 1921, 12,915.

Inasmuch as marriages cannot be consummated without a permit, marriage reports are practically complete although the law requiring the marriage to be performed in the town where the permit is issued is frequently violated because of the officiating clergyman's lack of knowledge of the law. Considerable correspondence has been necessary to adjust these matters.

Year	Population	Marriages	Rate
1917	1,354,930	14,290	10.5
1918	1,409,530	10,996	7.8
1919	1,464,360	13,054	8.9
1920	1,393,292	14,415	10.3
1921	1,420,576	12,915	9.1

Records

Since the removal of the Department into the new state office building, the records of the State are much more secure. A fire-proof vault has been provided in the basement of the new building to which the old records will soon be transferred, and provision has been made for the immediate placing of all incoming records in semi-fireproof safes.

Respectfully submitted,

WILLIAM C. WELLING, *Director,*
Bureau of Vital Statistics.

August 28, 1922.

Digitized by Google

Digitized by Google

BUREAU OF CHILD HYGIENE

July 1, 1920--June 30, 1922.

Digitized by Google

Digitized by Google

REPORT OF THE BUREAU OF CHILD HYGIENE

John T. Black, M. D., Commissioner of Health:

I have the honor to submit the second biennial report of the Bureau of Child Hygiene, covering the period from July 1, 1920 to June 30, 1922. This Bureau, authorized by Act of the Legislature of 1919, was formed July 1st of that year. It has continued to function with increased activity during the last two years. The personnel of the Bureau until January 1, 1922, has consisted of the Director of the Bureau and one Field Nurse, both registered nurses; one stenographer and a clerk.

The Bureau of Child Hygiene and the Division of Public Health Nursing continued to operate under one head, as mentioned in the report of 1920, until December 31, 1921. On January 1, 1922, Dr. Howard A. Lanpher; formerly of the United States Public Health Service, was appointed Director of the Bureau of Child Hygiene, and Miss Margaret K. Stack, R. N., who had been director of both branches, was made Director of Public Health Nursing, thus allowing her to devote her whole time to that work. Acknowledgement to her is made for information furnished relative to work done prior to January 1, 1922.

Scope of Activities

Activities of the Bureau of Child Hygiene have been grouped under four heads:

1. Prenatal (Care of the mother)
2. Infancy (Birth to 1 year)
3. Pre-school (1 to 6 years)
4. School (6 to 16 years)

Prenatal

It has been definitely proven that proper care and treatment of the expectant mother would greatly reduce maternal as well as infant mortality. In 1920, 194 women died of causes incidental to child-bearing, of whom 26 died of eclampsia and 57 of septicaemia. In 1921, 178 women died of the same causes. Of these 21 died of eclampsia and 55 of septicaemia. The charts printed on pages— show the age groups of the infants who died in Connecticut during the past two years. The proper care of the mother before birth will not only cut down this death rate but will make the mother's and baby's chances of health materially better. The efforts to increase prenatal nursing have been conducted through existing nursing agencies and

Digitized by Google

it is satisfactory to know that reports indicate there is a steadily increasing number of women seeking advice from this source, and that more and more women are being persuaded to place themselves under medical care. One difficulty in this work is the hesitancy of many women to make known their pregnancy and too often, the doctor is called too late to have his advice and treatment result in saving lives.

At the present time the best means of reaching the expectant mother is through the Infant Hygiene Conferences and the daily visits of the public health nurse as she goes from home to home in her district. The further development of such conferences with the necessary number of public health nurses will be the means of getting in touch with more women who need this advice.

The Bureau has compiled a set of nine prenatal letters, one for each month of pregnancy. These will be ready for distribution August 1, 1922, and will be sent upon request to any woman in the State.

Infancy

The largest loss of infant lives takes place during the first three months of life. It, therefore, follows that if infants are to be saved, it is necessary to reach them before that age. In order to accomplish this existing Visiting Nurse Associations have been encouraged to keep under supervision all new-born babies that come under their care. The public health nurse encourages mothers to bring their babies to the conference for the doctor's advice. This procedure has undoubtedly been a large factor in reducing the infant mortality and the future development of such conferences, which include medical advice (not treatment) and the follow up work in the home by the public health nurse will further reduce the rate. To make mothers realize that it is easier to keep the baby well than to get him well is being accomplished perhaps slowly but surely.

The Bureau has assisted in developing nine Infant Hygiene Conferences. To further the educational work in this line baby contests have been held in different parts of the state preparatory to the opening of Infant Hygiene Conferences. Several of these contests have been held. Such contests are becoming increasingly popular. With the inception of the Bureau, a change in the method of conducting them was inaugurated. Before that time prizes had been awarded to the baby who made the best ap-

Digitized by Google

pearance or who was the prettiest. With the knowledge of conditions which make a baby worthy of a prize has come a change in the method of selecting a winning baby. The Visiting Nurse Association or other organizations holding the contest, advertise the day, hour and place, both in the local press and by word of mouth. The Bureau of Child Hygiene co-operates to the extent of furnishing literature for distribution to mothers, posters, scales, measuring board, etc. The services of the Director of the Bureau and a nurse, are also provided. Local physicians are invited to be present to make examinations of the babies, and a special invitation is given the Health Officer. History cards are furnished by the Bureau with space for the results of the examination. The family history is taken by the lay members of the local organizations. The babies are then undressed and weighed and measured by the nurse, and record made on the cards. Examination is then made by the doctors and their findings are recorded. Special mention is made of defects found. If defects needing immediate attention are discovered the mother is informed of the condition and advised to consult her own physician without delay.

After the contest the cards are returned to the Bureau of Child Hygiene where elimination is made. Thus the babies are not present when the winner is selected. The selection is made on the merits of the baby as shown by the records on the card. Information as to the winner is sent by letter. By such a method, the possibility of partiality in the selection of the winner is obviated. After the winner is selected the cards are returned to the local organization for follow up work, and the visiting nurse then conveys to the parents of the baby information of the defects found and again emphasizes the need of medical care. The publicity and educational features of these contests have resulted in increasing the attendance at the conferences and enabled the public health nurse to reach many infants who had not come under their observation previously. Parents and nurses alike have expressed themselves as well pleased with the results of the contest.

Infant Mortality

The reduction in infant mortality has been practically continuous since 1910, the death rate during that year being 127 and in 1921, 73. During only two years in the last twelve year period has the death rate of one succeeding

Digitized by Google

year been greater than the year previous, and one of those years was the "Flu" year. In 1920 the total number of infants under one year who died was 3,144, whereas, in 1921 the total deaths were 2,489, representing a decrease in absolute number of 655 infants. The death rate per 1,000 births in 1920 was 92, while in 1921 it was 73, representing a decrease in the death rate per 1,000 births of 19 points. If the mortality rate for 1921 could have prevailed during the five years next preceding, 3,438 less infants would have died.

In 1920, of the infants who died, 722 or 22% were only one day old.

The number of infants who died between two days and one week were 307 or 10% of the total number.

16% or 127 infants died during the period between three weeks and one month after birth.

In 1921, 696 infants or 28% of the total number who died were under one day old.

13.5% or 362 died during the interval, two days to one week.

During the period three weeks to one month, 92 or 12.5%.

In 1920, 63% of the infants who died were under three months of age.

In 1921, 71.43% were under three months of age.

In the statistical report of the infant mortality for 1921 for the United States, published by the American Child Hygiene Association, Connecticut is given fifth place, the four States having a lower infant mortality rate being, Oregon, Washington, Minnesota and California.

Pre-school

This group continues to be the most difficult to reach. They are no longer babies but, nevertheless, are not old enough to go to school. This period has long been called the neglected period of childhood. Mortality during the period of pre-school age is relatively low, but the damage rate is high, for it is during this period that the child acquires most of the defects, which are later discovered at school, and from which he suffers more or less throughout his entire life.

Again we turn to the Child Hygiene Conference as the best medium for reaching these children. Through the efforts of this Bureau many nursing associations that heretofore dismissed from their supervision babies when they

Digitized by Google

were one or two years old, are now keeping under observation the pre-school age child until he goes to school. While some associations employed this method previously, during the past two years there has been an increase in the number. While this method will not include all pre-school age children, it will in time greatly increase the number under supervision and will assure necessary attention for a much larger number. In this group of children many defects are not corrected until the child enters school, and it is the aim of this Department to promote in every way possible better care for this group of children. This will include further efforts in control of communicable diseases, correction of physical and nutritional defects, dental work and community interest in order that children may be supplied with safe playgrounds.

The Nursery school, which is a new but promising movement in this country, would seem to solve some of the problems of this age. To get the pre-school age child into school in as good physical condition as possible should be the standard of work for every organization dealing with the health of children. With this idea in mind many local organizations are planning to make available free physical examinations in order that this group of children may be put in good physical condition before entering school.

Birth Registration

The making and keeping of accurate records of births and deaths is "vital" to the attempts made to improve conditions which influence the health of a State. One of the necessary components of accurate records is the prompt and accurate registration of births. In 1919 only 23 states and the District of Columbia were included in the "Registration Area" of the United States. Now there are 27 states and the District of Columbia. Connecticut is one of these states and birth certificates are sent to the mother of each newly born baby in an endeavor to make more certain that all births are recorded. The matter of making birth returns has reached a high stage of perfection, owing to the co-operation of the registrars, doctors and the State Department of Health. A change has been made in the form of the birth certificate used. Certificates are now signed by the Commissioner of Health and the Director of the Bureau of Child Hygiene instead of by the Governor and the Commissioner of Health. With the certificate

Digitized by Google

which is mailed to each mother is sent a pamphlet, "Care of the Baby." This method of getting certificates to each child has been improved in some cities. Arrangements have been made with the local Health Officer and the Public Health Nursing Associations which have resulted in the certificates being delivered by a Public Health Nurse personally. By this means the nurse establishes a contact with the new mother and baby and so is enabled to give the mother direct instructions in infant care. Also, she has opportunity to discover at an earlier date infants who need care and who would otherwise come to her notice too late.

Localities which are sending birth certificates direct are, Bridgeport, Fairfield, Hartford, Madison, New Haven, Norwich, Southington and West Haven. In addition, Waterbury prints and sends birth certificates.

Educational

Films and slides have been furnished and lectures and demonstrations given upon application throughout the State. The Bureau owns a portable scales which has been loaned upon application. Much literature has been distributed to mothers, Visiting Nurse Associations, towns, conferences, etc. The list of educational posters owned by the Bureau has been increased by the purchase of seven new sets. These posters cover the subjects of prenatal care, posture, diet, nutrition, food, care of the teeth, correct shoes, citizenship and allied subjects. 897 posters have been lent to 37 organizations for periods from three days to three weeks.

In addition, the Division of Venereal Diseases has acquired the following new posters:—

Two sets of "Keeping Fit" in miniature.
Two sets of "Youth and Life" in miniature.
Two sets of "The Venereal Menace".
Also a set of charts comparing the existence of Venereal Disease with other communicable diseases.

These latter posters are available to the Bureau for loan as occasion demands. Record is kept of the organization to which posters are lent, the day of loan and of return, and of their condition.

Digitized by Google

Midwives

Midwives were first required by Statute Law to be examined and licensed to practice in 1893. For nine years they were examined by the same Examining Board as were the physicians, but in 1902 they were provided by a special Board of Examiners in Midwifery and this method of examination is now operating. In 1919 a law was passed requiring annual registration of midwives in addition to their license. This statute has been honored as much in the breach as in the observance, for the reason that personnel could not be spared for a sufficient period of time to make regular visits for the supervision of midwives. However the services of a registered nurse, who is also a graduate of a school of midwifery, have been secured. It is her duty to visit each midwife, to examine her equipment, to give advice, to interpret rules and regulations of the Department, and if occasion presents itself to accompany her when she attends a confinement. A set of regulations governing the practice of midwifery has been prepared for issue to each individual midwife. Such regulations have never been furnished before. Conferences for midwives are included in plans for future development.

Chapter 242 of the Legislative Acts of 1921 requires that one or two drops of a prophylactic solution shall be instilled into the eyes of a newly born infant by any midwife who shall be in attendance at the birth, and ampoules of silver nitrate are furnished gratis by the Department through the local Health Officer for this purpose, yet midwives have been found who are ignorant of such law and who are not supplied with any prophylactic solution. This is only one instance showing the necessity of putting regulations in the hands of the midwife.

In 1920 the total number of natal cases attended by midwives was 6,505 or 19% of total births.

In 1921 the total was 5,485 or 16%.

The percentage of women attended by midwives in certain localities varies from 20% in Hartford to 37% in Bridgeport.

Only 78 midwives practiced legally during 1921, for of 132 midwives who made birth returns, 32 were licensed but not registered and 22 were neither licensed nor registered.

The largest number of births returns made by one midwife in 1921 was 263.

Digitized by Google

(During this year 26 cases of eclampsia and 57 cases of septicaemia after childbirth occurred. The number of these which can be traced to carelessness in treatment cannot be determined).

The Unmarried Mother

The problem of the unmarried mother is one which must come within the province of this Bureau more in the future than it has in the past, not only because of the newly born babe but because in many instances the mothers themselves are only children. It is a fact that although there may be illegitimate parents, there are no illegitimate babies and that a baby is entitled to proper care whatever his parentage. With this in mind, unmarried mothers must be taught that education and service are as much for them as for the legitimate mother.

Examination of the birth returns reveals that in 1920, 273 women gave birth to children out of wedlock. Of these 238 were white, 34 colored and one, color not given. The ages of these women varied from 12 to 45 years. 97 girls were under 19 years of age, and twelve of these girls were 15 years old or under. The largest number in any one age group was 49 at the age of twenty. Seven women had no professional attendant.

In 1921, 381 babies were born out of wedlock. Of this number 352 were white and 29 were colored. 121 girls were under 19 years of age. The largest number in any one age group was 50 at 19. 96 women had no professional attendant.

INFANT MORTALITY—1910-1921

Deaths per 1,000 Live Births.

Year	Deaths under 1 year	Births	Infant Death Rate
1910	3,472	27,314	127.1
1911	3,274	28,176	115.2
1912	3,430	29,039	118.1
1913	3,347	30,122	111.1
1914	3,480	30,910	109.0
1915	3,499	32,725	106.9
1916	3,579	35,455	100.9
1917	3,466	37,569	92.2
1918	3,962	37,158	106.6
1919	2,928	33,943	86.2
1920	3,144	34,157	92.0
1921	2,490	33,972	73.3

Digitized by Google

For future accomplishment, in the matter of maternal and infant welfare, the acceptance of the provisions of the Sheppard-Towner Act has made it possible to set up certain standards and to prepare a program whereby it is hoped to reach these standards.

A program of effort in behalf of the child of pre-school age has also been prepared, which is designed to be a continuation of infant hygiene work. The program is presented herewith:

Program for the Welfare and Hygiene of Maternity and Infancy

The Connecticut State Department or Health in co-operation with the United States Department of Labor will undertake the following program to secure the early and general adoption of standard measures for the protection of maternity and infancy:

1. Compilation and Tabulation of Statistics,—which will present accurate and detail knowledge of the distribution, causes and effects of maternal and infant mortality, and will also reveal, statistically, the results of protective measures.

2. Surveys,—To determine the extent of available qualified medical service in every community, including hospitals, physicians, nurses, midwives, clinics, boarding homes and institutions; local surveys to be made upon request or where conditions warrant, to determine the extent and character of protective measures needed.

3. Directory and Information Service,—The providing of directories of local physicians, midwives, nurses, clinics and hospitals and the establishment of stations or centers where information on all matters pertaining to maternal and infant hygiene can be secured.

4. Conference and Consultation Service,—To advise and assist professional, official or lay groups in introducing and executing programs for maternal and infant protective measures.

5. Educational Service,—By the distribution of a baby book to the mother of every new-born child, literature for the expectant mother and the organization of classes for midwives and mothers. An itinerant clinic and demonstration car will be used in this service.

6. Medical Service,—To include advice for clinics and especially referred cases; medical supervision of midwives; medical inspection of institutions and arrangements for the laboratory service.

Digitized by Google

7. Nursing Service,—Providing assistance in establishing visiting nurse service; health centers and clinics; and inspection of day nurseries, foundling homes, boarding homes, etc. Efforts to increase nursing personnel.

8. Sanitary Inspection Service,—To include investigation and inspection of milk and food supplies, and nursing or other sanitary inspections upon request or when conditions indicate. Provision for analysis of water or milk.

9. Popular Publicity Service,—By promoting special baby-saving campaigns, the giving of exhibits and the use of other publicity measures, such as the press, lantern slides and moving pictures.

Standards for the Welfare and Hygiene of Maternity and Infancy

The Bureau of Child Hygiene of the Connecticut State Department of Health aims to secure in every community the adoption of the following standards for the promotion of the welfare and hygiene of maternity and infancy.

1. Provision for the instruction of every expectant mother in maternal and infant hygiene.

This is to be accomplished by the direct distribution of literature; by popular lectures, exhibits and demonstrations; and by personal advice at designated centers or in the home.

2. Adequate and available medical service during the period of expectancy and the first year of the life of the infant.

This is to be secured by providing local directories of physicians, midwives, nurses, hospitals, etc.; by maintaining ample visiting nurse service; by establishing health centers for advice, examination and demonstration; by increasing hospital accomodations; and by co-ordinating the work of all agencies engaged in maternal and infant hygiene work.

3. Qualified medical, nursing and midwifery service.

This to be realized by urging the employment of thoroughly trained nurses; by the supervision of midwives and the institution of educational classes for midwives; by encouraging the medical profession to give greater consideration to maternal and infant needs; and by discouraging the employment of non-professional attendants and the use of nostrums and patent medicines.

Digitized by Google

4. Proper food for mother and infant, with sanitary control of food supplies.

This to be provided by the instruction of mothers as to proper diet and the preparation of the same; by making milk and other essential foods easily available; and by the systematic inspection of milk and other food-stuffs.

5. Environment conducive to the well-being of mother and child.

To be acquired by encouraging the necessary recreation and proper employment of expectant mothers; by assisting in the adjusting of the home during the lying-in period; by attention to general housing and sanitary conditions surrounding the abode of mother and child; and by the supervision and regulation of foundling homes, boarding homes, maternal homes, etc.

6. Full observance of the laws pertaining to maternal and infant hygiene.

This to be secured by requiring complete and accurate reporting of births and still-births; the early reporting of communicable diseases; and by encouraging the faithful observance of the medical laws concerning the care of the new-born, employment, commitments, and the placing of infants.

7. Appreciation and support of maternal and infant protective measures by the general public.

This to be accomplished by various methods of publicity to impress the public with the existing high and unnecessary maternal and infant mortality, and with the economic loss to the community occasioned thereby; also by presenting and urging the adoption of budgets sufficient for the maintenance of efficient protective service for both mother and child.

Connecticut has just cause to be proud of its place among the states having a low rate of infant mortality, but the goal is not yet won. Only a little work has been done among children in the country, and the problem of the care of the rural child is one which must be solved. Education of mothers, facilities for the care of children and stimulation of the medical and nursing professions will result in a general improvement in the health of our children, and a better citizenship because of that improved physical condition.

STANDARDS FOR THE CHILD OF PRE-SCHOOL AGE

1. COMPLETE BIRTH REGISTRATION.
2. CHILD HEALTH CENTERS, sufficient in number to give health instruction under medical supervision for all children of pre-school age not under the care of a private physician.
3. CO-OPERATION in providing a sufficient number of public health nurses to make home visits to all children of pre-school age needing care.

Digitized by Google

4. CO-OPERATION in providing various clinics, dental, eye, ear, nose and throat, venereal, etc., for the diagnosis of defects and diseases.
5. CHILDREN'S HOSPITALS, or beds in general hospitals, or provision for all sick infants and young children.
6. *STATE licensing and supervision of all child caring institutions in which infants or young children are cared for.
7. GENERAL educational work in prevention of communicable diseases, and hygiene and feeding of young children.

*Where standards appear to conflict or overlap work now being done by other organizations the idea contemplated is to co-operate with them and not to attempt new work.

Acknowledgement for the above standards is made to the Children's Bureau.

PROGRAM FOR THE CHILD OF PRE-SCHOOL AGE

COMPILATION OF STATISTICS.

To give approximate number of children of pre-school age. To furnish accurate knowledge of the number and causes of deaths among this group during the last five years.

SURVEYS.

In co-operation with the maternal and infant welfare program to determine facilities for the care of the child of pre-school age.

SANITARY INSPECTION SERVICE.

Investigation of water and milk supplies, sewage disposal, drainage and housing conditions.

EXISTING AGENCIES.

Co-operation with existing agencies in establishing conferences for the care of the pre-school age child, and provision for a sufficient number of public health nurses to do follow-up work.

CHILD HEALTH CONFERENCES.

To hold through local Health Officers and physicians, Child Health Conferences for that portion of the population not already served, and to provide nurses for follow-up work.

EDUCATIONAL.

By means of films, slides, demonstrations and lectures and by the distribution of literature to acquaint mothers and guardians of children, of—

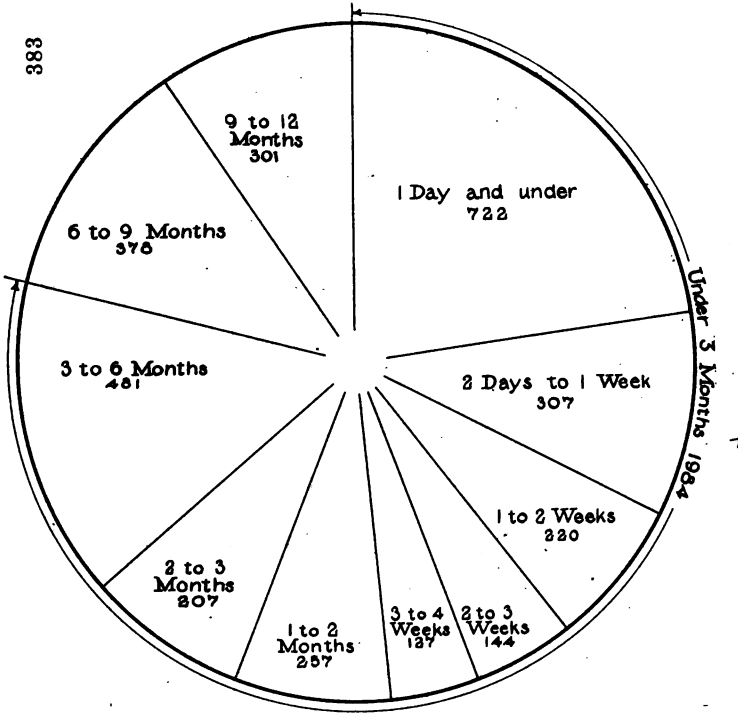
1. The value of continuing attendance at Health Conferences after their babies have passed their first year.
2. The value of vaccination and inoculation, accident prevention, and the hygienic measures necessary for the control of communicable diseases.

To acquaint communities with the need of dental and other clinics for the diagnosis and treatment of defects and diseases.

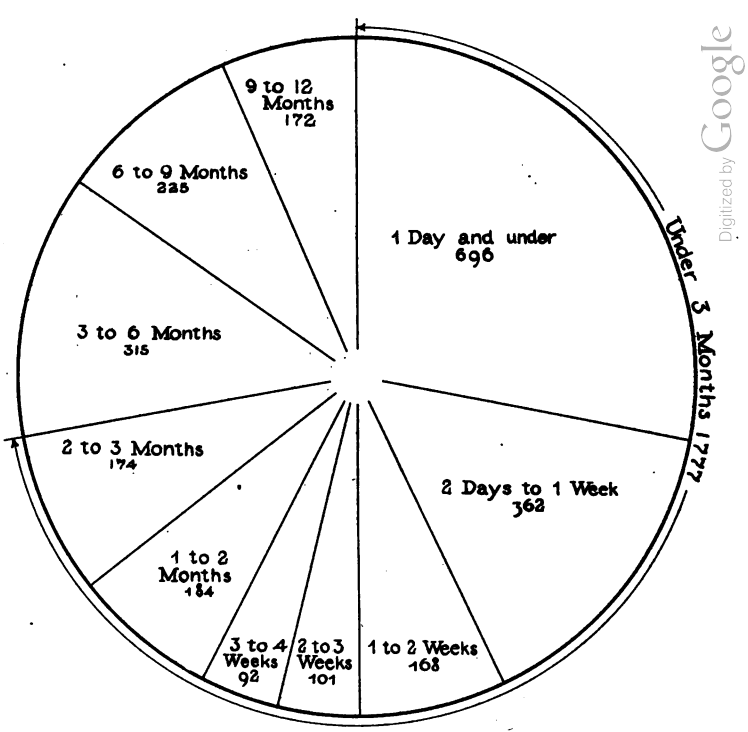
RECREATION.

Co-operation and stimulation of those communities interested in playgrounds, accident prevention and other means for promoting a safe, happy, healthy childhood.

Digitized by Google



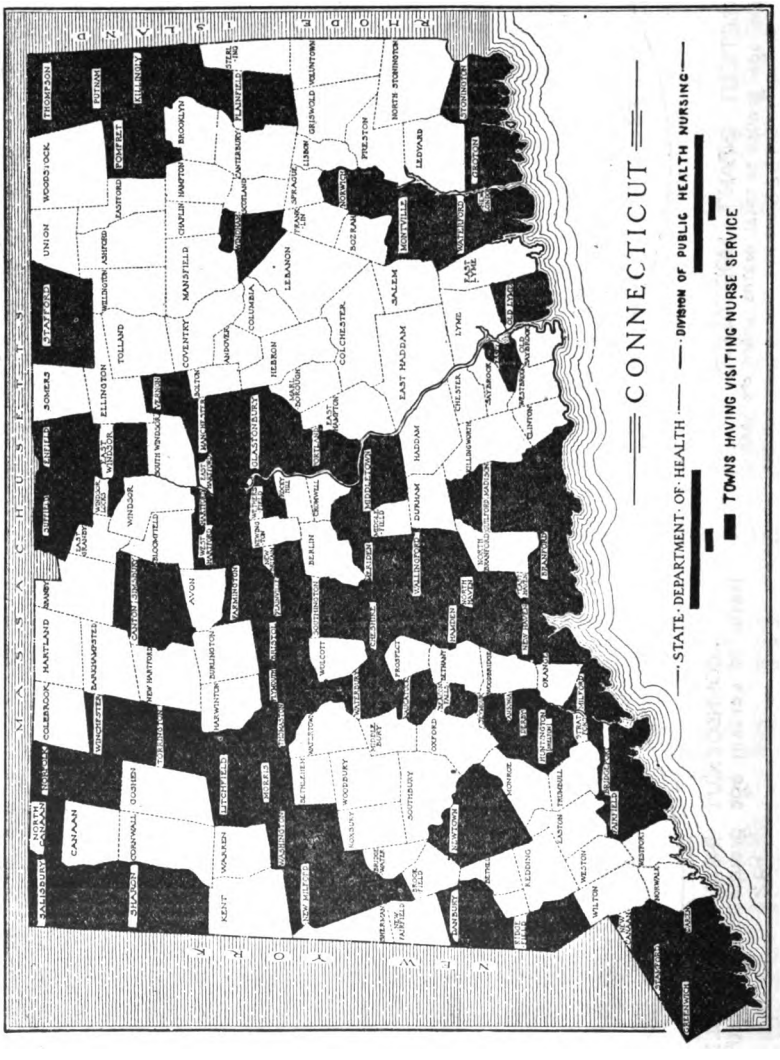
CONNECTICUT INFANT MORTALITY
Ratio of certain age groups to total deaths under one year
1920



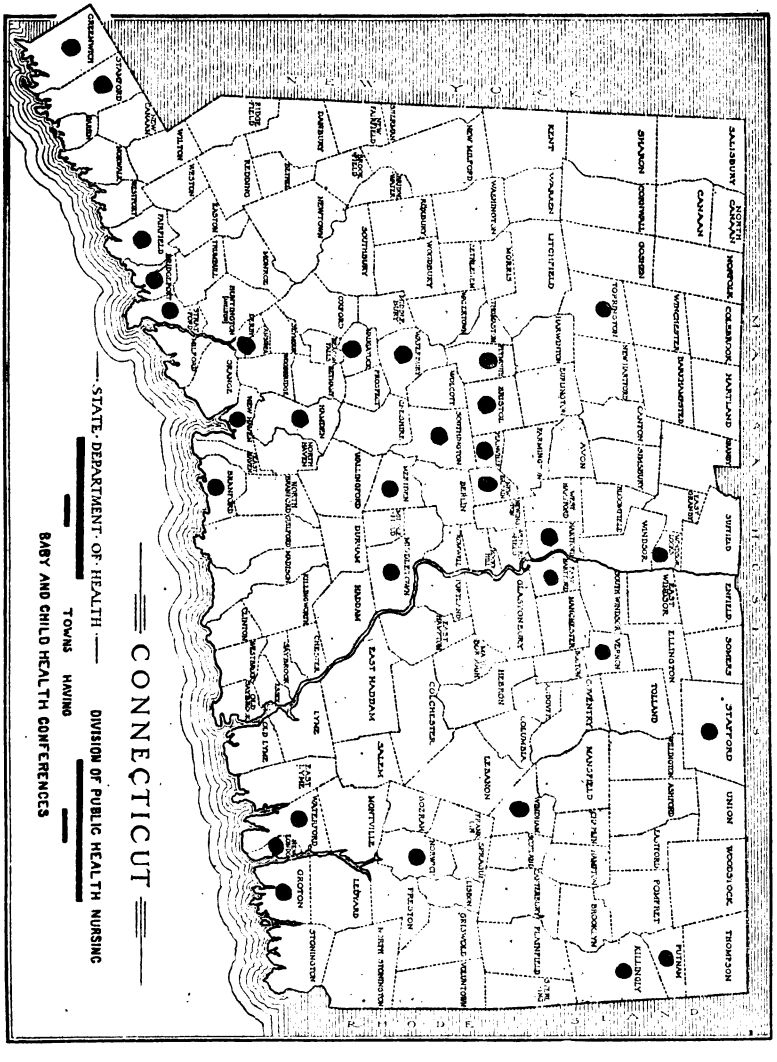
CONNECTICUT INFANT MORTALITY
Ratio of certain age groups to total deaths under 1
1921

CONNECTICUT
STATE DEPT. OF HEALTH

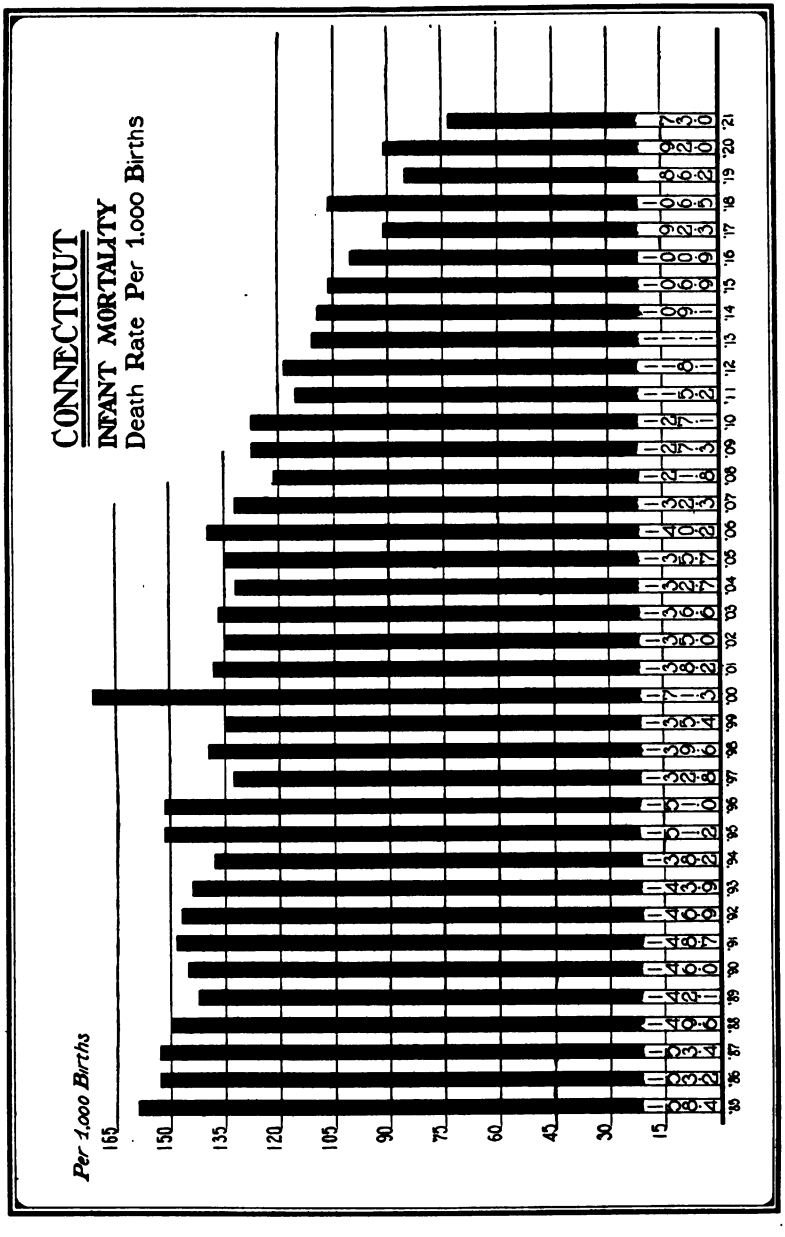
Digitized by Google



Digitized by Google



Digitized by Google



Digitized by Google

Infant Mortality—1921

It is interesting to note that no county had a mortality rate of 100 or more.

Fairfield County

Towns	Total Deaths	Reported Births	Infant Mortality Rate
Bethel	3	40	75.0
Bridgeport	271	4,111	65.9
Brookfield	1	8	125.0
Danbury	42	526	79.8
Darien	3	52	57.7
Easton	1	12	83.3
Fairfield	11	243	45.3
Greenwich	40	547	73.1
Monroe	—	18	—
New Canaan	2	75	26.7
New Fairfield	—	3	—
Newtown	3	27	111.1
Norwalk	39	585	66.7
Redding	2	11	181.8
Ridgefield	5	58	86.2
Shelton	11	205	53.7
Sherman	1	2	500.0
Stamford	90	1,053	85.5
Stratford	21	310	67.7
Trumbull	1	26	38.5
Western	—	5	—
Westport	9	63	142.9
Wilton	2	20	100.0
Total	558	8,000	69.8

Hartford County

Towns	Total Deaths	Reported Births	Infant Mortality Rate
Avon	3	27	111.1
Berlin	6	102	58.8
Bloomfield	6	30	200.0
Bristol	50	637	78.5
Burlington	1	31	32.3
Canton	5	43	116.3
East Granby	3	13	230.8
East Hartford	5	207	24.2
East Windsor	6	46	130.4
Enfield	34	333	102.1
Farmington	6	74	81.0
Glastonbury	6	123	48.8
Granby	4	24	166.7
Hartford	304	3,949	76.9
Hartland	—	4	—
Manchester	28	409	68.5
Marlborough	—	4	—
New Britain	151	1,756	85.9
Newington	4	26	153.8
Plainville	6	97	61.9

Digitized by Google

Towns	Total Deaths	Reported Births	Infant Mor[redacted] Rate
Rocky Hill	3	35	85.7
Simsbury	5	60	83.3
Southington	11	187	58.8
South Windsor	3	34	88.2
Suffield	8	99	80.8
West Hartford	35	218	160.6
Wethersfield	6	56	107.1
Windsor	8	88	90.9
Windsor Locks	8	48	166.7
Total	715	8,760	81.6

Litchfield County

Towns	Total Deaths	Reported Births	Infant Mortality Rate
Barkhamsted ...	—	3	—
Bethlehem	—	4	—
Bridgewater	1	4	250.0
Canaan	—	11	—
Colebrook	—	2	—
Cornwall	1	14	71.4
Goshen	—	8	—
Harwinton	2	72	27.8
Kent	4	17	235.3
Litchfield	3	37	81.1
Morris	—	1	—
New Hartford..	5	46	108.7
New Milford ..	7	75	93.3
Norfolk	1	11	90.9
North Canaan ..	—	32	—
Plymouth	14	133	105.3
Roxbury	—	7	—
Salisbury	—	28	—
Sharon	2	82	24.4
Thomaston	10	72	138.9
Torrington	35	528	66.3
Warren	—	5	—
Washington	2	21	95.2
Watertown	10	128	78.1
Winchester	11	209	52.6
Woodbury	—	13	—
Total	108	1,563	62.1

Middlesex County

Towns	Total Deaths	Reported Births	Infant Mortality Rate
Chester	1	31	32.3
Clinton	—	11	—
Cromwell	3	44	68.2
Durham	1	14	71.4
East Hampton..	3	36	83.3
East Haddam ..	4	30	113.3
Essex	2	45	44.4
Haddam	2	28	71.4
Killingworth	—	8	—

Digitized by Google

Towns	Total Deaths	Reported Births	Infant Mortality Rate
Middlefield	4	21	190.5
Middletown	41	657	62.4
Old Saybrook ..	—	23	—
Portland	12	60	200.0
Saybrook	6	37	162.2
Westbrook	1	15	66.7
Total	80	1,060	75.5

New Haven County

Towns	Total Deaths	Reported Births	Infant Mortality Rate
Ansonia	41	465	88.2
Beacon Falls ..	5	37	135.1
Bethany	—	6	—
Branford	10	112	89.3
Cheshire	1	45	22.2
Derby	32	499	64.1
East Haven	8	91	87.9
Guilford	2	51	39.2
Hamden	10	211	47.4
Madison	3	34	88.2
Meriden	50	843	59.3
Middlebury	1	6	166.7
Milford	13	213	61.0
Naugatuck	16	260	61.5
New Haven	261	4,261	61.3
North Haven ...	—	30	—
North Branford	—	19	—
Orange	16	211	75.8
Oxford	1	20	50.0
Prospect	—	4	—
Seymour	10	159	62.9
Southbury	2	21	95.2
Wallingford	13	257	50.6
Waterbury	209	2,565	81.5
West Haven	9	186	48.4
Wolcott	—	5	—
Woodbridge	2	20	100.0
Total	715	10,631	67.3

New London County

Towns	Total Deaths	Reported Births	Infant Mortality Rate
Bozrah	—	13	—
Colchester	3	45	66.7
East Lyme	2	21	95.2
Franklin	—	2	—
Griswold	9	81	111.1
Groton	3	148	20.3
Lebanon	2	21	95.2
Ledyard	1	19	52.6
Lisbon	2	24	83.3
Lyme	1	13	76.9
Montville	3	72	41.7

Digitized by Google

Towns	Total Deaths	Reported Births	Infant Mortality Rate
New London	48	704	68.2
North Stonington	—	23	—
Norwich	63	785	80.3
Old Lyme	2	15	133.3
Preston	—	12	—
Salem	1	5	200.0
Sprague	3	52	57.7
Stonington	18	189	95.2
Voluntown	—	14	—
Waterford	—	58	—
Total	161	2,316	69.5

Tolland County

Towns	Total Deaths	Reported Births	Infant Mortality Rate
Andover	—	4	—
Bolton	—	7	—
Columbia	—	14	—
Coventry	—	35	—
Ellington	5	41	121.9
Hebron	—	9	—
Mansfield	3	32	93.8
Somers	3	40	75.0
Stafford	10	132	75.8
Tolland	2	12	166.7
Union	—	4	—
Vernon	9	112	80.4
Willington	2	17	117.6
Total	34	459	75.1

Windham County

Towns	Total Deaths	Reported Births	Infant Mortality Rate
Ashford	1	7	142.8
Brooklyn	2	50	40.0
Canterbury	1	10	100.0
Chaplin	—	4	—
Eastford	1	13	76.9
Hampton	1	2	500.0
Killingly	10	142	70.4
Plainfield	15	184	81.5
Pomfret	2	18	111.1
Putnam	25	212	117.9
Scotland	—	3	—
Sterling	3	24	125.0
Thompson	19	113	168.1
Windham	37	396	93.4
Woodstock	1	18	55.6
Total	118	1,196	98.7

Digitized by Google

Towns Having No Deaths.

Fairfield County
Monroe
New Fairfield
Weston

Litchfield County
Barkhamsted
Bethlehem
Canaan
Colebrook
Goshen
Morris
North Canaan
Roxbury
Salisbury
Warren
Woodbury

New Haven County
Bethany
North Haven
North Branford
Prospect
Wolcott

Hartford County
Hartland
Marlborough

New London County
Bozrah
Franklin
North Stonington
Preston
Voluntown
Waterford

Windham County
Chaplin
Scotland

Tolland County
Andover
Bolton
Columbia
Coventry
Hebron
Union

Middlesex County
Clinton
Killingworth
Old Saybrook

County Infant Mortality.

	Births	Deaths	Rate
Windham	1,196	118	98.7
Hartford	8,760	715	81.6
Middlesex	1,060	80	75.5
Tolland	459	34	74.1
Fairfield	8,000	558	69.8
Litchfield	1,563	108	69.1
New London	2,316	162	69.9
New Haven	10,631	714	67.2
Total	33,985	2,489	
State Infant Mortality Rate			73.3

Respectfully submitted,

HOWARD A. LANPHER, M. D.

Director.

Digitized by Google

Digitized by Google

DIVISION OF PUBLIC HEALTH NURSING

July 1, 1920--June 30, 1922

Digitized by Google

Digitized by Google

BIENNIAL REPORT

DIVISION OF PUBLIC HEALTH NURSING

Dr. John T. Black,

Commissioner of Health,

Hartford, Conn.

I have the honor to submit the second biennial report of the Division of Public Health Nursing for the years July 1, 1920 to June 30, 1922.

The work of this Division has been a continuation and further development of the work started in 1919. The great impetus given the development of public health nursing during 1918-1919 has continued in Connecticut with no lessening of speed, and much credit is due the various new associations supplying visiting nursing, that not one of them has had to suspend its nursing service on account of the bad financial conditions of the past two years. This fact reflects credit on this Department also, for in our work in assisting them to organize we emphasized the fact that the work should be started in such a way as to guarantee its being continued; its continuation depended not only upon adequate financial support but community interest, and a real desire to make health service available for their town.

There are in Connecticut now, 77 towns that have public health nursing service. This number does not include towns which have school nursing service only. During the past two years 19 of the 77 towns were organized for public health nursing with assistance from this Division. The number of towns with nursing service is now double, lacking one, of the number that had such service four years ago. Of these 77 towns 51 employ but one nurse.

The following table shows the distribution of public health nurses in Connecticut by counties:

County	Total Pop.	Pop. of towns cov. by nurses	No. nurses	Pop. of towns not cov. by nurses
New Haven	415,214	405,107	99	10,107
Hartford	336,027	311,767	44	24,260
Fairfield	320,936	274,904	46	46,032
New London	104,611	83,128	15	21,483
Litchfield	76,262	64,382	14	11,880
Windham	52,815	44,811	8	8,004
Middlesex	47,550	28,588	8	18,962
Tolland	27,216	14,305	4	12,911
Total	1,380,631	1,226,992	238	153,639

Digitized by Google

School nurses and industrial nurses are not included in this table which was prepared to give the exact number of public health nurses in the state who are doing prenatal, maternity, infant, child hygiene (1 to 5 years), and tuberculosis nursing.

If the 153,639 population of the state not covered by nurses doing the work mentioned above, were supplied with nurses in the same proportion as the population covered by the 238 nurses (1 nurse to 5,155 population), 30 additional nurses would be needed. This is one of the problems with which this Department must cope, for in the 153,639 population, the total number of births was 2,941 and the number of infant deaths 223.

It is an accepted fact that the public health nurse is the nucleus around which must develop infant and child hygiene work, and that the Infant and Child Health Conference is a most important factor in the child health program. This Division has assisted in the development of nine such conferences making to date 31 towns which conduct well organized Infant and Child Hygiene Conferences. The attendance at these conferences is steadily increasing. Plans for conferences in the undeveloped sections of the state are being perfected now. Making it possible for every mother who wishes, to receive a doctor's advice about the care of her baby at a conference, and having the public health nurse make a practical application of that advice and knowledge in the mother's own home, are the most effective means we have to-day of reducing infant mortality.

The last report made mention of the need of more attention to the health of the pre-school age child and to the desirability of having every child enter school in as good physical condition as possible. We have endeavored to stimulate activity along this line and while something has been accomplished, there is much to be done. Mention has been made in the Child Hygiene report of the difficulty of getting in touch with this group of children. The greatest results have been achieved through the Infant Hygiene Conference.

The nursing of communicable diseases is much needed. The Health Officer realizes that the public health nurse is the one best fitted to do the educational work which

Digitized by Google

plays so large a part in the control of these diseases. Nevertheless, it is a fact that on account of lack of funds, comparatively few Boards of Health are able to employ nurses to give special attention to the communicable disease problem. For the same reason Visiting Nurse Associations have been able to do but a very limited amount of work in communicable diseases. This is a weak point in nursing work to-day, and we look forward to the time when the child who has a communicable disease, and who for some good reason cannot be taken to the hospital, will be given as good nursing care at home, as is given in the home to-day to the child who has a non-communicable disease.

Records and Reports

This Division has continued to supply to newly formed nursing associations the first installment of nursing records. The expense of this venture has been comparatively small while the results have been very satisfying. Almost every association in Connecticut is now keeping its records in such a way as to admit of study and comparison, a situation which did not exist two years ago. In order to assist the nurses in installing these records, this Division developed a model set of records which the Field Worker uses in her demonstrations with the nurses. This model includes the method of keeping account of the work of the nurse from the time the patient is admitted to her care until he is discharged; record cards, copies of the day sheet and the monthly reports.

In response to requests from Visiting Nurse Associations we compiled and printed a standard monthly report form which indicates the minimum data that each association should compile for its own use.

In 1921 the Connecticut Organization for Public Health Nursing voted to have each Visiting Nurse Association member send a monthly report of its work to this Division. While all the associations in Connecticut are not members of this Organization we have every reason to believe that each association will comply with the vote.

This Division is now ready to supply associations with the standard forms, together with a duplicate form to return to this office.

Digitized by Google

School Nursing

The work in this direction has been to induce communities not having medical or nurse inspection to introduce such, and many times to assist them in arranging for the support of such work. Studies and recommendations made by this Bureau have resulted in the employment of full time school nurses and many Visiting Nurse Associations, upon our advice, have included part time school work as one of their activities. In several instances we have been able to have the nurse take special training in school nursing and have assisted in securing scholarships for such.

Co-operation With the Red Cross

The arrangement made in April, 1919, with the American Red Cross continues in force. By this arrangement the Chief of the Division of Public Health Nursing and the Field Worker are Field Supervisors for the Red Cross in Connecticut.

Co-ordination of Public Health Nursing Service

This Division has continued its efforts in co-ordinating Public Health Nursing Organizations in order that duplication may be avoided. Several towns have made advantageous readjustments and it is hoped that others will do so in the near future.

Educational Requirements for Public Health Nurses

The minimum requirements for public health nurses adopted by this Division in 1919 have continued in force. At that time the Department decided that it would not recommend a nurse who did not meet the following requirements:

(a) For associations employing two or more nurses, only graduate, registered nurses shall be eligible.

(b) For the associations employing but one nurse or the association that is installing a Public Health Nursing Service for the first time, only graduate, registered nurses who have had a four months' course in public health nursing or six months' supervised experience in general, child hygiene and tuberculosis nursing, shall be eligible.

The Department is still of the opinion that only the very best nurses who can be secured should be employed

Digitized by Google

in the rural communities. This opinion is shared by others as is indicated by the approval of these requirements by the Connecticut Organization for Public Health Nursing in January, 1922.

That the towns have seen the wisdom of waiting for qualified public health nurses reacts to their credit and has been one of the factors in making Connecticut known outside our own borders for her well developed public health nursing program.

We have emphasized the need of public health nurse training for every nurse if she wishes to do public health nursing and we have been able to assist many nurses in securing scholarships for such training.

Public Health Nurse Bulletin

A mimeographed bulletin has been sent once in two months to each Public Health Nurse Association in the state. The object of this is to give the nurses helpful material and information which they can get in no other way, and to keep them informed about public health nursing in Connecticut.

Compiling List of Registered Nurses

In accordance with Chapter 120 of the Public Acts of 1919, registered nurses are among those who must re-register annually with the State Department of Health. To the Division of Public Health Nursing has been assigned the task of compiling this list. The returns for 1921 are as follows:

Number of cards returned	1,165
Number in active practice	992
Number retired	153
Number out of state	16
Died since re-registration	4

Educational Material

A great effort has been made to supply material needed by the nurses in their educational work. That our efforts were fruitful is shown by the statistical report given later, which shows the number of posters, films, latern slides, and literature sent out by this Division.

Upon request from nurses in the rural communities a simplified outline for Little Mothers' Leagues was ar-

Digitized by Google

ranged. The outline prepared gave the topics for each lesson and left it with the nurse to enlarge on them as her classes indicated.

County Meetings

At irregular periods this Division has called together the public health nurses of the state in county groups. This was done in response to requests from various counties, in order that they might get together and discuss their problems in smaller groups and have the benefit of this Division at the meeting. These have proved popular with the nurses.

Public Addresses

Public addresses have been given on Child Hygiene and Public Health Nursing to the following groups:

Nursing Organizations
W. C. T. U.
Women's Clubs
Civic Clubs
Diocesan Bureau
Student Nurses in Hospitals
Public Health Nurse Students
Local League of Women Voters
Others

Personnel of the Division

It was with much regret that in November, 1921, the Department accepted the resignation of Miss Mary E. Conlan, R. N. Miss Conlan's spirit of service and high professional standards made her a valued employee.

In January, 1921, Miss Louise C. Spence, R. N., was appointed as Miss Conlan's successor.

Since January 1, 1922, when the Division of Public Health Nursing and the Bureau of Child Hygiene became separate units, the personnel of the Division has consisted of the Chief of the Division, one Field Worker, and one stenographer.

Digitized by Google

Statistical Report

The statistical report is as follows:

Films loaned to 54 towns	230
Lantern slides loaned to 20 towns	1,200
Posters loaned to 37 towns	897
Literature distributed	16,122
Letters written	2,311
Mimeographed material	20,068

July, 1920 to August, 1921

1.	Inquiries about Child Hygiene and Public Health Nursing in Conn.	230
2.	Nurses interviewed regarding Public Health Nursing	121
3.	Nurses referred for positions	29
4.	Nurses secured for positions	25
5.	Inquiries about nurses for positions	123

September, 1921 to July, 1922

The following headings were used in writing the monthly report beginning September 1, 1921, and the totals are for the period from September, 1921 to July, 1922.

1.	Towns visited	140
2.	Meetings attended	48
3.	Conferences in the field	67
4.	Conferences in the office	104
5.	Talks given	32
6.	Visits to nurses	117
7.	Requests for assistance in the field	120
8.	Nurses secured for positions	10

Summary

A previous Child Hygiene report stated that further decrease in the infant mortality rate would come—

(a) Not only by enlarging what is being done but by having prenatal care and instruction available for every expectant mother.

(b) Better medical attention and nursing care at child birth and after, the solution of which would include the necessary supervision of midwives.

Definite gains have been made in the above fields:

By the increased number of Infant Hygiene Conferences through which the public health nurse has come in contact with the expectant mother and advised and encouraged her to place herself under the care of her family physician.

By the supervision of midwives which has recently been started.

By the addition of 19 towns which have started public health nursing within the past two years.

Digitized by Google

By the increased number of Infant Hygiene Conferences which are being conducted.

By the increased number of prenatal, infant and tuberculosis cases under care.

The work of the public health nurse is bringing results, as is indicated by the fact that Connecticut this year has the seventh lowest infant death rate of any state in the union and the lowest of the Atlantic Seaboard states. When the 153,639 population of Connecticut is better supplied with public health nurses, it seems possible that we can look forward to a still lower reduction.

The map attached hereto shows the towns in Connecticut that have a Public Health Nurse Service. Several towns are ready to start when a qualified public health nurse can be secured. When one takes into consideration the difficulty that has existed in securing qualified public health nurses, the increased number of towns that have started such work is very satisfactory. The difficulty in securing a sufficient number of qualified nurses still exists and is one of the most difficult problems with which this Division has had to cope.

At the present time there are nine towns that have requested this Division to recommend to them a qualified public health nurse. We have, so far, been unable to meet their requests.

The development of public health nursing in Connecticut has brought about an increased demand for qualified public health nurses and this Division has been unable to find a sufficient number to fill the positions. We have given this matter careful thought and study and have finally come to the conclusion that until such time as there is a sufficient number of qualified public health nurses, the situation can best be met in Connecticut by using graduate registered nurses of good preliminary education, and providing them with adequate supervision from this Department. This step should not be taken unless the supervision can be supplied, for in Connecticut to-day the nurses who have had training or experience or both, realize the need of having someone on whom they can call for help and advice. The nurse who has not had training or experience in public health nursing needs guidance and help.

To supply such supervision an additional field worker will be needed in this Division in order that we

Digitized by Google

may maintain our present high standard of public health nursing and at the same time assure each town of the best possible service.

MARGARET K. STACK, R. N.

Chief, Division of Public Health Nursing.

August 8, 1922.

Digitized by Google

Digitized by Google

LIST OF CONNECTICUT HEALTH OFFICERS

Digitized by Google

Digitized by Google

LIST OF
CONNECTICUT HEALTH OFFICERS

County Health Officers

Town	*Name*	*P. O. Address*
Hartford	Daniel A. Markham, Esq.	Hartford
New Haven	J. Frederick Baker, Esq.	New Haven
New London	Arthur M. Brown, Esq.	Norwich
Litchfield	William W. Bierce, Esq.	Torrington
Fairfield	James A. Marr, Esq.	Bridgeport
Middlesex	M. Eugene Culver, Esq.	Middletown
Tolland	M. D. O'Connell, Esq.	Stafford Springs
Windham	William A. King, Esq.	Willlimantic

Town, City and Boro Health Officers

Town	*Name*	*P. O. Address*
Andover	H. A. Thompson	Andover
Ansonia	Frederick C. Goldstein, M. D.	Ansonia
Ashford	George O. Balch	Warrenville
Avon	C. N. Woodford, M. D.	Avon
Barkhamsted	Herbert Case	Barkhamsted
Beacon Falls	Chas. D. Roberts	Beacon Falls
Berlin	R. M. Griswold, M. D.	Kensington
Bethany	S. G. Davidson	Bethany
Bethel	H. F. Moore, M. D.	Bethel
Bethel (boro)	H. F. Moore, M. D.	Bethel
Bethlehem	G. A. Benjamin, (actg.)	Bethlehem
Bloomfield	G. F. Woodford	Bloomfield
Bolton	J. White Sumner	Bolton
Bozrah	E. S. Abel	Bozrah
Branford	A. S. McQueen, M. D.	Branford
Branford (boro)	A. S. McQueen, M. D.	Branford
Bridgeport	William Hall Coon. M. D.	Bridgeport
Bridgewater	Mary C. McIntrye, M. D., (actg.)	Roxbury
Bristol	J. I. Woisard, M. D.	Bristol
Bristol (city)	J. I. Woisard, M. D.	Bristol
Brookfield	Chas. A. Ryder, M. D.	Brookfield Center
Brooklyn	E. C. Babson	Danielson
Burlington	John D. Luby	Bristol, R. F. D. 3
Canaan	Isaac P. Hornbeck	Falls Village
Canterbury	Levi N. Clarke	South Canterbury
Canton	C. J. Kilburn, M. D.	Collinsville
Chaplin	F. C. Lummis	Chaplin

Digitized by Google

Town	*Name*	*P. O. Address*
Cheshire	C. N. Denison, M. D.	Cheshire
Chester	F. Sumner Smith, M. D.	Chester
Clinton	D. A. Fox, M. D.	Clinton
Colchester	Edward J. Howland, M. D.	Colchester
Colchester (boro)	Edward J. Howland, M. D.	Colchester
Colebrook	H. L. Culver	Winsted, R. F. D 1
Columbia	R. L. Cobb	Columbia
Cornwall	R. J. Grand-Lienard, M. D.	West Cornwall
Coventry	W. L. Higgins, M. D.	South Coventry
Cromwell	C. E. Bush, M. D.	Cromwell
Danbury	G. E. Lemmer, M. D.	Danbury
Danbury (city)	G. E. Lemmer, M. D.	Danbury
Darien	G. H. Noxon, M. D.	Darien
Derby	E. T. Sharpe, M. D.	Derby
Durham	E. A. Markham, M. D.	Durham
Eastford	C. T. Latham	Phoenixville
Easton	Daniel M. Edwards,	Stepney, R. F. D. 15
East Granby	Frank H. Dibble	East Granby
East Haddam	M. W. Plumstead, M. D.	East Haddam
East Hampton	G. N. Lawson, M. D.	Middle Haddam
East Hartford	F. H. Mayberry, M. D.	East Hartford
East Haven	E. C. M. Hall, M. D.	New Haven—82 Grand Ave.
East Lyme	F. H. Dart, M. D.	Niantic
East Windsor	George E. Porter, M. D.	Warehouse Point
Ellington	J. E. Flaherty, M. D.	Rockville
Enfield	G. T. Finch, M. D.	Thompsonville
Essex	F. B. Bradeen, M. D.	Essex
Fairfield	Lawrence E. Poole, M. D.	Fairfield
Farmington	Stuart E. Phelps, M. D.	Farmington
Franklin	Charles B. Davis	Franklin
Glastonbury	C. G. Rankin, M. D.	Glastonbury
Goshen	Carrie N. Stevens, M. D.	Cornwall
Granby	Wesley N. Clark	Granby
Greenwich	A. E. Austin, M. D.	Greenwich
Greenwich (boro)	A. E. Austin, M. D.	Greenwich
Griswold	G. H. Jennings, M. D.	Jewett City
Jewett City (boro)	G. H. Jennings, M. D.	Jewett City
Groton	Louis M. Allyn, M. D.	Mystic
Groton (boro)	F. W. Hewes, M. D.	Groton
Guilford	F. DeWitt Smith, M. D.	Guilford
Guilford (boro)	F. DeWitt Smith, M. D.	Guilford
Haddam	Le Roy Smith, M. D.	Higganum
Hamden	Geo. H. Joslin, M. D.	Hamden
Hampton	Charles E. Burnham	Hampton
Hartford	C. P. Botsford, M. D.	Hartford
Hartland	Edward A. Gaylord	Hartland
Harwinton	H. B. Hanchett, M. D.	Torrington
Hebron	J. Banks Jones	Andover, R. F. D. 2
Kent	E. W. Bull	Kent
Killingly	W. H. Judson, M. D.	Danielson
Danielson (boro)	W. H. Judson, M. D.	Danielson
Killingworth	D. A. Fox, M. D.	Clinton
Lebanon	Wm. T. Curry	Leonard's Bridge

Digitized by Google

Town	*Name*	*P. O. Address*
Ledyard	J. A. Stoddard	Norwich, R. F. D. 6
Lisbon	Chas. D. Wolf	Jewett City
Litchfield	Wm. E. Turkington	Litchfield
Bantam (boro)	George Burgoyne	Bantam
Litchfield (boro)	Wm. E. Turkington	Litchfield
Lyme	J. G. Ely, M. D.	Hamburgh
Madison	M. P. Rindge, M. D.	Madison
Manchester	D. C. Y. Moore, M. D.	South Manchester
Mansfield	E. H. Marsh, M. D.	Mansfield Center
Marlborough	Wm. W. Bolles	Marlborough
Meriden	Joseph A. Cooke, M. D. (actg.)	Meriden
Meriden (city)	Joseph A. Cooke, M. D.	Meriden
Middlebury	F. S. Chamberlain	Middlebury
Middlefield	T. P. Walsh, M. D.	Middletown
Middletown	T. P. Walsh, M. D.	Middletown
Middletown (city)	T. P. Walsh, M. D.	Middletown
Milford	W. S. Putney, M. D.	Milford
Monroe	S. B. Hayes,	Stepney
Montville	M. E. Fox, M. D.	Uncasville
Morris	E. R. Skilton	Morris
Naugatuck	Walter I. Baker, M. D.	Naugatuck
Naugatuck (boro)	Walter I. Baker, M. D.	Naugatuck
New Britain	F. P. Lee, M. D.	New Britain
New Canaan	M. J. Brooks, M. D.	New Canaan
New Canaan (boro)	M. J. Brooks, M. D.	New Canaan
New Fairfield	Everett J. S. Scofield, M. D.	Danbury
New Hartford	C. F. English, M. D.	New Hartford
New Haven	F. W. Wright, M. D.	New Haven
New London	B. N. Pennell, D. V. S.	New London
New Milford	F. E. King, M. D.	New Milford
Newington	John H. Fish	Newington
Newtown	W. H. Kiernan, M. D.	Sandy Hook
Norfolk	I. L. Hamant, M. D.	Norfolk
North Branford	I. E. Brainard, M. D.	Wallingford
North Canaan	F. H. Lee, M. D.	Canaan
North Haven	R. B. Goodyear, M. D.	North Haven
North Stonington	Thurman P. Maine, M. D.	North Stonington
Norwalk	Robert E. Perdue, M. D.	Norwalk
Norwalk (city)	Robert E. Perdue, M. D.	Norwalk
Norwich	George Thompson, M. D.	Taftville
Norwich (city)	E. J. Brophy, M. D.	Norwich
Old Lyme	E. K. Devitt, M. D.	Lyme
Old Saybrook	Irwin Granniss, M. D.	Saybrook
Orange	Everett D. Mead	Orange
Oxford	Cyrus J. Shelton	Oxford
Plainfield	A. A. Chase, M. D.	Plainfield
Plainville	J. N. Bull, M. D.	Plainville
Plymouth	R. J. Lawton, M. D.	Terryville
Pomfret	Willis Covell, (actg.)	Pomfret Center
Portland	F. E. Patter, M. D.	Portland
Preston	E. P. Barnes	Norwich, R. F. D. 8
Prospect	Clifford P. Wallace	Prospect
Putnam	P. A. Gardner	Putnam

Digitized by Google

Putnam (city)	P. A. Gardner	Putnam
Redding	E. H. Smith, M. D.	Redding
Ridgefield	R. W. Lowe, M. D.	Ridgefield
Ridgefield (boro)	R. W. Lowe, M. D.	Ridgefield
Rocky Hill	O. A. Moser, M. D. (actg.)	Rocky Hill
Roxbury	Mary C. McIntyre, M. D.,	Roxbury
Salem	James Lane	Salem
Salisbury	W. B. Bissell, M. D.	Lakeville
Saybrook	H. T. French, M. D.	Deep River
Scotland	A. H. Gallup	Scotland
Seymour	Chas. H. Conine	Seymour
Sharon	C. W. Bassett, M. D.	Sharon
Shelton	G. A. Shelton, M. D.	Shelton
Sherman	N. T. Hungerford	Gaylordsville, R. F. D. 1
Simsbury	James Stretch, M. D.	Simsbury
Somers	Jas. W. Dawson, M. D.	Somers
Southbury	Wm. H. Wakelee	Southbury, R. F. D. 1
Southington	W. G. Steadman, M. D.	Southington
Southington (boro)	W. G. Steadman, M. D.	Southington
South Windsor	F. H. Mayberry, M. D. (actg.)	East Hartford
Sprague	L. J. Fontaine	Baltic
Stafford	F. L. Smith, M. D.	Stafford Springs
Stafford Springs (boro)	F. L. Smith, M. D.	Stafford Springs
Stamford	R. W. Crane, M. D.	Stamford
Stamford (city)	James J. Costanzo, M. D.	Stamford
Sterling	F. W. Hazard, (actg.)	Oneco
Stonington	C. F. Congdon, M. D.,	Mystic
Stonington (boro)	C. F. Congdon, M. D.,	Mystic
Stratford	G. F. Lewis, M. D.	Stratford
Suffield	W. E. Caldwell, M. D.	Suffield
Thomaston	J. H. Kane, M. D.	Thomaston
Thompson	Oscar Munyan	Thompson
Tolland	C. S. Hurlburt	Rockville, R. F. D. 4
Torrington	Elias Pratt, M. D.	Torrington
Torrington (boro)	Elias Pratt, M. D.	Torrington
Trumbull	E. S. Fairchild	Nichols
Union	A. M. Heck	Stafford Springs, R. F. D. 2
Vernon	W. B. Bean, M. D.	Rockville
Rockville (city)	W. B. Bean, M. D.	Rockville
Voluntown	John H. Hoover, M. D.	Voluntown
Warren	David Strong	Cornwall Bridge, R. F. D.
Wallingford	I. E. Brainard, M. D.	Wallingford
Wallingford (boro)	Mark T. Sheehan, M. D.	Wallingford
Washington	F. W. Wersebe, M. D.	Washington
Waterbury	T. J. Kilmartin, M. D.	Waterbury
Waterford	G. M. Minor, M. D. (Associate Health Officer of Stonington) W. A. Hillard, M. D.	157 W. Broad St. Westerly, R. I.
Watertown	Chas. W. Jackson, M. D.	Watertown

Digitized by Google

Town	*Name*	*P. O. Address*
Westbrook	Irwin Granniss, M. D.	Saybrook
	M. W. Plumstead, M. D., acting during winter	East Haddam
West Hartford	R. W. E. Alcott, M. D.	West Hartford
West Haven	C. A. Bevan, M. D.	West Haven
Weston	John A. Moore, M. D.	Westport
Westport	John A. Moore, M. D.	Westport
Wethersfield	E. G. Fox, M. D.	Wethersfield
Willington	F. B. Converse, M. D.	West Willington
Wilton	Mrs. Grace K. Schenck	Wilton
Winchester	S. G. Howd, M. D.	Winsted
Windham	F. E. Wilcox, M. D.	Willimantic
Willimantic (city)	W. P. S. Keating, M. D.	Willimantic
Windsor	H. F. King, M. D.	Windsor
Windsor Locks	J. A. Coogan, M. D.	Windsor Locks
Wolcott	Walter L. Barber, Jr. M. D.	Waterbury— 89 No. Main St.
Woodbridge	LeRoy C. Beecher	Westville, R. F. D. 1
Woodbury	H. S. Allen, M. D.	Woodbury
Woodstock	Joseph Spalding, M. D.	Woodstock

Digitized by Google

Digitized by Google

TABLE OF CONTENTS

Digitized by Google

SUBJECT INDEX

Page

ACCIDENTAL DEATHS
statistics 28

ACTINOMYCOSIS 108

ANTHRAX
reported human case 66, 110
cases reported, five years 119

ANTITOXIN (See biologics)
distribution 41
expenditures 35–38

APPROPRIATIONS
total all health agencies 34
department of health 1919-21 14
recommended 1923-25 16
laboratory building 15

BABY CONFERENCES
towns conducting 111

BATHING
inspection, swimming pools 299, 359
survey, shore resorts (See Engineering) 359

BIOLOGICS DISTRIBUTED
(See antitoxin) 41, 61, 116, 117

BIRTHS
stillbirths 26, 364
number and rates (five years) 363
registration 375

BOTULISM 108

BUBONIC PLAGUE
report of rat investigation 132–136

BUREAUS
administration
activities 13
vital statistics
activities 363
preventable diseases
director's report 57
laboratories
activities 213, 239
sanitary engineering
summary, activities 359
director's report 265
child hygiene
activities 371
venereal diseases
activities 185

Digitized by Google

Page

BURIAL GROUNDS
approval, additions 357

CAMPS
investigated 352

CANCER
campaign 114
statistics, five years 26

CHICKEN POX
discussion 124
reported cases, five years 67, 119
cases and deaths by towns 94–101; 175–181

CHILD HYGIENE
director's report 371
infancy discussion 372
prenatal discussion 371
preschool discussion 374, 381
towns having baby and child health conferences 405
infant mortality rate, reduction 365, 373
still-births 26, 364

CHLORINATION
water supplies 266, 267

CLINICS
venereal disease 198
treatment stations 203
clinic attendance record (chart) 198

COMMUNICABLE DISEASES
fatality rates 1917-1921 106
general discussion 58, 107, 118
morbidity statistics, five years 119
mortality statistics, 1920, 1921 ..... 62, 106–120
cases and deaths, towns 94, 174
by months 60, 121
interstate reporting of 63, 109
outbreaks and epidemics, list of 65, 110
by ages 61, 123

CONJUNCTIVITIS 67, 124
cases and deaths by towns 94–101; 175–181

COUNTY HEALTH OFFICERS
list 406

DEATHS
number and rates, five years 94, 364

DEATH RATES
annual, 1885-1921 ..... 19, 20
principal diseases, five years 20–28, 365
accidents and violence 367

Digitized by Google

Page

DIPHTHERIA
prevalence 65, 124
statistics, five years 22, 119, 127
general discussion, record low rate 124
control 124
morbidity and fatality rates (five year table) 92, 106, 120, 127
deaths and mortality rates (five year table) 106, 120, 127
morbidity by counties, 1920 and 1921 ....68, 127
chart 1885-1921 25
cases and deaths by towns 94–101; 175–181
cultures, examination laboratory 241
virulence test statistics 221, 241, 247
analysis, diphtheria tests, laboratory 220, 246
analysis, diphtheria virulence tests 221, 247
value of multiple cultures, a study 254

DYSENTERY
discussion 127
reported cases, five years 119
investigations 110

ENCEPHALITIS LETHARGICA
general discussion, case study 69

EPIDEMICS 65, 110, 128

EXPENDITURES
estimates, 1923-1925 16
financial statements 34–38
other state departments 34
per capita 33

FAVUS
reported cases, five years 119

FECES
examination 217, 219, 228, 241, 246

FILMS (See publicity)

FINANCIAL STATEMENTS 36–39

GARBAGE (See nuisances)

GERMAN MEASLES
discussion 129
reported cases, five years 119
cases and deaths by towns 94–101; 175–181

GLANDERS
laboratory examinations 224, 250
reported cases, five years 119
analysis, laboratory examinations 241

GONORRHEA (See venereal diseases)
discussion 185
blindness due to 190
reported cases, five years (graph) 119, 201
analysis, laboratory examinations 224, 249
cases and deaths by towns 94–101; 175–181

Digitized by Google

Page

HEALTH OFFICERS
list of 406
assistance to (map) 64, 112

HOOKWORM 108

ICE POND INVESTIGATIONS 297

INDUSTRIAL WASTES BOARD
abolished 315

INFANTILE PARALYSIS (See Poliomyelitis)

INFANT MORTALITY
statistics, ten years 378
by towns and counties 387
statistics, 1885-1921 ..... 26, 27
evaluation prevented loss 30

INFANTS
number and mortality 365

INFIRMARY COMMISSION
activities 15
need for State Infirmary 15

INFLUENZA EPIDEMIC
cases and deaths, by towns 94–101; 175–181
statistics, five years 20, 119
mortality, fatality and morbidity, (four years) 129

LABORATORIES, BUREAU
director's report 213, 239
working conditions unsatisfactory 213
new buildings 213
laboratory staff 214, 239
growth of work 215, 241, 244
specimens examined (ten year table) 215, 241
analyses, months (table) 217, 243
laboratory outfits 216
See separate diseases for specimens examined.
See water, sewage and milk.
study on examination of milk 229
thermometer testing 244, 258

LEPROSY
reported cases, (five years) 119
record of cases 110, 130

MALARIA
discussion of cases 72
analysis of blood examined 225, 250
reported cases, last five years 119
investigations 65, 130

MARRIAGES
number and rate, five years 367

MATERNITY AND INFANCY
program for work 379

Digitized by Google

Page

MANSFIELD STATE TRAINING SCHOOL
survey of 355

MEASLES
cases and deaths by towns 94–101; 175–181
deaths, five years 24
reported cases, five years 119
general discussion, low mortality rate 73, 130
morbidity and fatality rates (five year table) 92, 106, 120, 131
morbidity by counties (1920, 1921) 74, 131
deaths and mortality rates (five year table) 24, 92, 106, 131
investigations 65, 110

MEDICAL REGISTRATION
annual registration 49, 51
medical practice law, comments 15
registration receipts 49

MENTAL HYGIENE
summary, activities 208
director's report 207

MENINGITIS, CEREBROSPINAL
discussion 124
deaths, five years 24
reported cases, five years 119
mortality, fatality and morbidity 92, 106, 120, 124
cases and deaths by towns 94–101; 175–181

MIDWIVES
licensed during year 54, 377

MILK
laboratory analyses (statistics ten years) 241
general discussion milk analysis 227, 229
milk analyses by months 227, 254
disease on milk farms, depots, etc. 115

MOTHERS 378, 380

MUMPS
cases and deaths by towns 94–101; 175–181
reported cases, five years 74, 119
investigations 65, 131

NUISANCES
list of 337, 345

NURSING (See Public Health Nursing)

ODORS (See Nuisances)

OPHTHALMIA
reported cases, five years 119

ORGANIZATION
chart 18

OUTBREAKS 65, 110

Digitized by Google

Page

PARA-TYPHOID FEVER
laboratory tests, statistics 74, 131
reported cases, five years 119
epidemic 153

PELLAGRA
reported cases, five years 119

PHYSICIANS
registration 49, 51
reporting diseases 58

PLAGUE
report of investigation of conditions 132–136

PNEUMONIA, LOBAR
summary 136
statistics 119
laboratory examinations, statistics 119
analysis, specimens examined 224, 250
cases and deaths by towns 94–101; 175–181

POLIOMYELITIS
morbidity, fatality and mortality rates 92, 106, 120
deaths, five years 24, 139
general discussion, case study 75, 137
statistics, five years 119, 139
investigations 65, 110

POPULATIONS
method of computing 363

PRENATAL WORK
review 371

PRE-SCHOOL AGE
care during 374, 381

PREVENTABLE LOSS (CONNECTICUT) 29–34
by deaths 30
by disability 31

PREVENTED LOSS (CONNECTICUT)
typhoid fever, evaluated 32

PREVENTION WORK
cost, all health agencies 34
cost per capita (chart) 33

PUBLIC HEALTH COUNCIL
activities 11
report to Governor 11
meetings 11
personnel (see title page)

PUBLIC HEALTH NURSING
summary, activities 395, 401
personnel of division 400
director's report 395

Digitized by Google

Page

towns having visiting nurses (a map) 404
co-operation with Red Cross 398
nurse bulletin 399
distribution in state 395
educational requirements of nurses 398
standardization of reports and records 397
registered nurses, list 399
school nursing 398

PUBLICITY
general 113
nursing 401
preventable diseases 63, 113
diseases 63

PUERPERAL DISEASES
statistics 26

RABIES
discussion 77, 139
analysis, laboratory examinations 241
examination for, in laboratory 225, 250
treatment notice to health officers 140
reported cases, five years 119
Pasteur treatments statute 77

RECOMMENDATIONS
commissioner's report 16

REPORTS
health officers', daily 57
of local health officers 57
result, daily reporting 106

SANITARY ENGINEERING
director's report 265

SCARLET FEVER
cases and deaths by towns 94–101; 175–181
deaths, five years 22
general discussion 78, 140
morbidity and fatality rates (five year table) 92, 106, 120, 140
deaths and mortality rates (five year table) 140
morbidity by counties (1920,1921) 79, 140
investigations 65, 110

SCHOOLS
investigated 348
survey, public schools 113

SEPTIC SORE THROAT
reported cases, five years 119
cases and deaths by towns 94–101; 175–181

SEWAGE
approvals, sewage disposal works 302
investigations 326

Digitized by Google

Page

SEWERAGE
(see Stream Pollution)
general discussion 225, 251, 300
list, sewerage systems 301
methods, sewage treatment 301
inspections, sewerage works 309

SHORE RESORTS
survey 359
list 359

SLEEPING SICKNESS (see Encephalitis Lethargica)

SMALLPOX
prevalence investigations 65, 79, 110, 142
general discussion 118, 141
statistics, five years (table) 119, 142
epidemic 118

SPRINGS (See wells)

SPUTUM (See tuberculosis)

STATISTICS
evaluation 29

STILL BIRTHS (See births)

STREAM POLLUTION
investigations 316
discussion 315
Industrial Waste Commission abolished 315

SUMMER CAMPS
discussion 352
list 352

SUMMER RESORTS
inspection 358

SUPPLIES AND EQUIPMENT 41

SWIMMING POOLS
inspection 299, 359

SYPHILIS (See venereal diseases)
cases and deaths by towns 94–101; 175–181
Wassermann tests 222, 249
reported cases, five years (table) (chart) 119, 194
spread by one case (chart) 189
cost, insane institutions 192
deaths, compared with other diseases (chart) 191
discussion 185

TETANUS
discussion 79, 143
reported cases, five years 119
prophylaxis and treatment 144

Digitized by Google

Page

TOWNS (see TOWN INDEX)

THERMOMETER TESTING 244, 258

TRACHOMA
reported cases, five years 119
discussion 143

TREATMENT STATIONS (venereal) 203

TRICHINOSIS 108, 144

TUBERCULOSIS
investigations 65
deaths and rates, five years 22
evaluation, prevented loss 30, 31
general discussion 79, 145
morbidity, fatality and mortality table 92, 106, 120, 146
deaths, age groups 61, 123
rates, five years, pulmonary 146
rates, five years, all forms 80, 146
cases and deaths, by towns 94–101; 175–181
specimens examined in laboratory, ten years (table) 241
examinations, sputum 222, 248
reported cases, five years 119
morbidity by counties (1920, 1921) 80, 81, 146, 147
chart 23

TYPHOID FEVER
endemic cases 83, 148
statistics, five years 20, 119, 149
evaluation prevented loss 30, 31
epidemics 83–92; 150–167
morbidity, mortality and fatality rates 62, 106, 120, 149
chart, 1885-1921 21
cause of infection (table) 82, 148
infected water 82, 87, 148
infected milk 82, 83, 86, 87, 148, 150, 151
carriers 82, 89, 148, 150, 228
cases and deaths, by towns 94–101; 175–181
discussion of cases 89–92; 169–172
investigations, list of 65, 110
cases, age groups 89
morbidity, counties 92, 149
reports, outbreaks 83, 150
Widal tests in laboratory, ten years 241
analysis, typhoid and para-typhoid tests 218, 245
occupation of cases 89

TYPHUS FEVER
prevalence, five years 110, 119

VACCINES (see Biologics)

VENEREAL DISEASES
statistics 119, 194, 201
director's report 185
location clinics, attendance (graph) 198–9; 202
treatment stations 203

Digitized by Google

Page

syphilis, reported cases (chart) 194
control of 197
prevalence of in a community 187
gonorrhoea, reported cases (chart) 119, 201
cases, state institutions 188
importance control 190, 203
age distribution (graph) 196

VIRULENCE TESTS, DIPHTHERIA
statistics 241

VITAL STATISTICS
records 363–7
report of director 363

WASSERMANN TEST
specimens examined annually (ten year table) 241
analysis, laboratory findings 222, 249
general discussion 222, 249

WATER
interstate carrier certification 296
special water supply investigations 271, 284
laboratory analyses statistics, ten years 226
general discussion, water analysis 225, 251
statistics, water analysis by months 226, 253
discussion, public water supplies 265
municipal works, list 266
private works, list 266
treated supplies, list 266, 267
approvals of water works, list 267
inspections, water-sheds, discussion 267
water-sheds inspected, list 268
(See wells, ice and swimming pools)

WELLS AND SPRINGS
analysis, water 294

WHOOPING COUGH
deaths, five years 24
general discussion 92, 172
morbidity, mortality and fatality rates 62, 106, 120, 173
morbidity by counties 92, 173
reported cases, five years 119
cases and deaths by towns 94–101; 175–181

Digitized by Google

Digitized by Google

Digitized by Google

TOWN INDEX

Town	Page
Andover	65
Ansonia	284, 337
Ashford	319
Avon	65, 271, 276, 333
Berlin	326
Bethel	317
Bloomfield	65, 326, 337
Bolton	337
Branford	278, 284, 302, 326, 331, 338
Bridgeport	72, 73, 75, 118, 310
Bristol	65, 285, 289
Brooklyn	65
Canaan	310
Canton	65
Cheshire	65, 327
Chester	65, 285
Clinton	302, 338
Colchester	65, 285, 339
Coventry	331
Cromwell	279
Danbury	303, 328, 339
Danbury (city)	65, 75, 87, 286
Danielson	65, 88, 339
Derby	65
Durham	338
East Granby	150, 328
East Haddam	65, 286
East Hampton	286, 65, 87
East Hartford	286, 287, 340
Ellington	65
Enfield	65, 83, 150
Essex	73, 287, 289
Fairfield	303, 329
Farmington	272, 289
Greenwich	65, 72, 73
Groton	65, 73, 75, 272, 298, 303, 318, 330
Hamden	72, 289, 297
Hartford	65, 72, 73, 75, 86, 89, 153, 200
Kent	272, 289
Killingly	65
Lebanon	65
Litchfield	290, 317, 318, 329
Lyme	65
Madison	290
Manchester	279, 311, 323
Mansfield	65, 89, 304
Meriden	65, 86
Meriden (city)	65, 311
Middletown	65, 280
Middletown (city)	280, 291, 297, 312, 329
Milford	65, 291, 298, 328, 329
Montville	330

Digitized by Google

Town	Page
Naugatuck	330
New Britain	66, 75, 298, 299, 304, 340
New Fairfield	65
New Haven	73, 168
New London	65, 73
Newington	340
North Canaan	291
North Haven	65, 73, 292, 340
Norwalk	72
Norwich	65, 150, 280, 292, 306, 341
Orange	65, 341
Plainfield	65
Plainville	65, 306, 319
Plymouth	75, 332, 341
Pomfret	65, 73
Putnam	65, 73, 75, 273, 281, 299
Redding	65, 72, 89, 306
Rocky Hill	72
Rockville (city)	65, 273
Salisbury	310
Saybrook	293
Shelton	65, 75
Simsbury	65, 331
Somers	65
Southington	281, 312
Stafford Springs (boro)	306
Stamford	65, 73, 282, 293, 313
Stonington	65, 73
Stonington (boro)	73, 272, 332
Stratford	314, 342
Suffield	293, 332, 343
Thomaston	282
Thompson	65, 73, 75, 313
Torrington	65
Trumbull	332
Vernon	65
Wallingford	65, 86, 277, 307, 333
Washington	307, 334
Waterbury	75, 79, 334, 343
Waterford	325, 334
Watertown	325
West Haven	314, 335
West Hartford	65, 75, 307, 334, 343
Wethersfield	72, 307, 336, 344
Wilton	65, 75, 150
Windham	293
Willimantic (city)	111, 283, 336, 344
Windsor	65, 86, 344
Windsor Locks	283
Winsted	65, 344
Wolcott	294
Woodbury	294, 336
Woodstock	73, 294, 325

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google